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ABSTRACT

The thesis of this conference report is that acceleration is a much more effective method than remediation for bringing at-risk children into the educational mainstream at an early age. The papers summarized in the report provide a background on the history, politics, and demography of at-risk students and suggest applications of acceleration to different subjects and learning strategies. The papers are: (1) "Don't Remediate: Accelerate" (H.M. Levin); (2) "'Dunces,' 'Shirkers,' and 'Forgotten Children': Historical Descriptions and Cures for Low Achievers" (L. Cuban and D. Tyack; (3) "The Educationally At-Risk: What the Numbers Mean" (J. Catterall and E. Cota-Robles); (4) "Is the Time Ripe for More Government Help?" (M. W. Kirst and B. Gifford); (5) "How Families and Communities Can Help" (J. L. Epstein and D. Scott-Jones); (6) "Accelerated Schools Can Begin Before Kindergarten" (E. W. Gordon and L. P. A. Root); (7) "Going Beyond Minimal Competency'" (R. Calfee, R. Avelar La Salle, and H. Cancino); (8) "What's Going on in the Classroom" (S. B. Heath and L. Mangiola); (9) "Mathematics for At-Risk Children: Who Cares?" (N. Noddings and J. Greeno); (10) "Seeing, Touching, and 'Figuring Out What Happens': The Role of Science in At-Risk Education" (J. M. Atkin and S. A. Raizen); (11) "Instructional Strategies: What Works and What Doesn't" (R. E. Slavin and N. A. Madden); (12) "Limited-English Students Can Benefit from Accelerated Classes" (E. Cohen and M. B. Arias); (13) "Evaluating the Accelerated School: How Do We Measure Change?" (D. M. Fetterman and E. H. Haertel); (14) "Putting Educational Decision-Making Back Where It Belongs: At the Local School" (H. Levin); and (15) "Implementing the Accelerated School" (J. S. Rogers, R. Polkinghorn, Jr., and B. LeTendre). A directory of the Illinois Network of Accelerated Schools and an outline of accelerated schools' principles and assumptions are appended. (FMW)

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PLANNING FOR AN ACCELERATED SCHOOL

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Planning For An Accelerated School

Acknowledgements

The establishment of the Illinois Network of Accelerated Schools for disadvantaged students represents one of numerous initiatives to achieve the Illinois State Board of Education's objective "To adopt, strengthen, and/or expand policies, procedures and programs which address the problems of at-risk children and youth."

Henry M. Levin, Professor of Education and Economics and Director of the Center for Education Research at Stanford University, defines educationally disadvantaged pupils as "Those who lack the home and community resources to fully benefit from conventional schooling practices and the recent wave of educational reforms. Because of poverty, cultural differences, or linguistic differences, they tend to have low academic achievement and experience high secondary school dropout rates. Such students are especially concentrated among minority groups, immigrants, non-English-speaking families and economically disadvantaged populations." Unfortunately, as educational plans are made for the 1990s and beyond, increasing numbers of pupils in Illinois tend to fit that definition. Data from the report cards submitted by Illinois districts to the State Board of Education indicated that of the 1,783,317 pupils who attended Illinois public schools in 1987-88:

- Approximately 3.3 percent of these students are limited-English-proficient and eligible for bilingual education services, an increase of .1 percentage from the prior year and a 12 percent increase from 1980-81.

- Almost one-third (33.1 percent) are Black, Hispanic, Asian or Native American. Ten years ago, these students represented 25.3 percent of the public school enrollment.

- More than 50 percent of black children, 25 percent of Hispanic children and 16 percent of white children now live with one parent.

- In 90 percent of the single-parent families, the lone parent is the mother and the household income is well below poverty level. Among them, too, is a growing number of children born to teenage mothers, many of whom are unwed and more than half of whom are minority.

- Almost three out of ten students (28.9 percent) are reported as coming from low-income families.

- An estimated 112,000 three- and four-year-olds in Illinois are at risk of academic failure and could benefit from an early intervention program.

- Although the annual dropout rate in Illinois high schools has declined from 6.5 percent in the mid 1970s to 5.6 percent in 1987-88, about 34 Illinois report graduation rates of less than 50 percent. The high school graduation rate was 80.3 percent, about two percentage points lower than last year's 82.6 percent.

Development of the Illinois Network of Accelerated Schools supports the thesis that there are effective ways of providing appropriate educational services so that the rapidly increasing population of educationally disadvantaged youth in Illjnois does not grow up as a rising population of disadvantaged adults. It emphasizes the importance of setting concrete, specific, measurable goals for the initial stages of schooling so that by the time students enter secondary school, they are able to benefit from regular instruction. It stresses the significance of data-based, shared decision making at the strategies to bring all children up to grade level and into the educational mainstream. The Accelerated Schools concept provides for the integrated delivery of human services in support of the education process. Lastly, assessment is an integral part of the program design.

The Accelerated Schools approach is characterized by high expectations, deadlines by which at-risk children ill be performing at grade-level range, stimulating instructional programs, planning by the educational staff who will offer the programs, and the use of all available resources, including the parents of the students. In addition, it advocates the use of instructional strategies particularly appropriate for the disadvantaged and urges better use of time. Most important of all, the approach incorporates a comprehensive set of strategies that mutually reinforce each other in creating an organizational thrust toward raising the achievement of all students.

The summaries in this publication provide an overview of presentations at a conference, "Accelerating the Education of At-Risk Students," held at Stanford University on November 17-18, 1988. We are grateful to the Conference Director, Henry M. Levin, the authors, and the Accelerated School Project staff for sharing these materials with Illinois educators.

Robert Leininger
State Superintendent of Education

Planning for an Accelerated School

A Two Day Workshop

Introduction

The education of at-risk students has become one of the major challenges of our time. These students are heavily concentrated among minority groups, immigrants, single parent families, and the poor. At-risk students begin school without many of the standard skills upon which the school curriculum is based. As they move through school, they drop farther behind the academic mainstream and account for a disproportionate share of teenage pregnancies, drug use, and juvenile delinquency.

About one-third of all students in the public schools meet the at-risk criteria, and the proportion is rising rapidly because of high birth rates among these populations and tremendous immigration from the Third World. without intervention, this future population will have a serious impact on the economy, higher education, poverty, crime rates, the job market, and the cost of public services. Dropouts from a single graduating class in a large urban district are projected to lose $200 billion in earnings over a lifetime, with a concomitant loss of $60 billion in lost tax revenues to the government. These figures do not consider the cost to business, which is already facing a job market that lacks the necessary education and skills. Nor does it consider the enormous social and psychological costs to individual lives and our society as a whole.

Clearly, the challenge of helping at-risk students to become academically able is not one that can be taken lightly. It will require a major social, political, and economic commitment and a drastic transformation of the schools that education at-risk students. We believe we have a moral imperative to help these children; they are our society's investment in the future. While some prominent voices are already stressing considerations of economic practicality, we also must all that we believe our nation's commitment to a just and equitable society demands our best efforts for them.

This workshop on Accelerating the Education of At-Risk Students proposes a strategy to bring these children into the educational mainstream at an early age. Instead of focusing on remediation, we argue for acceleration.

The papers in this volume provide a background on the history, politics, and demography of at-risk pupils and offer powerful insights on how acceleration can be applied to different subjects and instructional strategies.

Although the challenge is great, our overall stance is one of optimism. As one of our authors reminds us, John Dewey said that "a problem well put is half solved." By committing ourselves to accelerated strategies for the at-risk students rather than remedial strategies, we believe that we are halfway there.

Henry M. Levin
Professor of Education and Economics
Stanford University

Don't remediate: accelerate

Henry M. Levin

At-risk students are highly susceptible to academic failure. Poverty, cultural differences, or linguistic differences trigger low academic achievement and high dropout rates. These educational deficiencies later translate into poor life chances for employment, income, and political and social participation.

When at-risk students start school, they lack many of the standard skills on which the school curriculum is based. By sixth grade, they are about two years behind grade level in achievement; by twelfth grade, they are about four years behind—if they stay in school. About half do not complete high school.

Currently, at-risk students are assisted with remedial services, which often pull them out of regular classrooms. Unfortunately, experience has shown that this strategy will keep these students from becoming academically able because: 1) it institutionalizes them as slow learners, thus reducing expectations for their success; 2) it slows down the pace of instruction so that they get farther and farther behind their peers; 3) it emphasizes the mechanics of basic skills without giving them the substance that will keep them interested and motivated; 4) it provides no way to close the achievement gap between disadvantaged and advantaged students; and 5) it does not help teachers and parents formulate strategies to improve the learning of their students and children.

What we need is a policy that accelerates learning for at-risk students, so that they will be academically able at an early phase of their schooling. The Stanford Accelerated Schools Project has designed an accelerated elementary school that will help these children catch up with their non-disadvantaged peers by the end of sixth grade. The entire school is dedicated to this objective, and this commitment is reflected in the involvement of many participants. Teachers, parents, and students have high expectations, and set deadlines for students to meet particular educational requirements. The educational staff tailors the accelerated school's dynamic, instructional programs for its own needs. And the program uses all available resources in the community—including parents, senior citizens, and social agencies.

Acceleration can not only raise achievement, but reduce dropout rates, drug use, and teenage pregnancies by creating a strong sense of self-worth and educational accomplishment for students who would normally feel rejected by schools and frustrated with their own skills.

The school is based on an accelerated curriculum. It uses an assessment system that evaluates the performance of children periodically to assure that they are on the appropriate accelerated trajectory.

The curriculum will be heavily language-based, even in mathematics. Language use will be emphasized across the curriculum, with an early introduction to writing and reading for meaning. The curriculum will also show the usefulness of what is being learned and introduce a problem-solving orientation.

Parents will be deeply involved in two ways. First, they will be asked to sign a written agreement that clarifies the obligations of parents, school staff, and students. The agreement will be explained to parents and translated, if necessary. Second, the parents will have opportunities to interact with the school program and to receive training so that they can actively assist and support their children. Parents will be asked to set high educational expectations for their children, to support their children's success, and to encourage their reading.

An extended-day program will provide rest periods, physical activities, the arts, and a time period for independent assignments or homework. During this period, college students and senior citizen volunteers will assist students. Since many of the students are "latch-key" children, extending the school day is likely to be attractive to parents. Instructional strategies will also include peer tutoring and cooperative learning. Both have been shown to be especially effective with disadvantaged students.

These broad features of the accelerated school make it a total institution for accelerating the educational progress of the disadvantaged, rather than just a grafting of compensatory or remedial classes onto the elementary school's conventional agenda. Central to this strategy is putting curriculum and instructional decision-making back into the hands of the teachers.

Each school will have an overall steering committee and task forces that will be composed of teachers and other staff. The principal will be the "instructional leader" who will coordinate and guide this committee and address the logistical needs to translate its decisions into reality. School staff will set out a program that is consonant with student needs and the strengths of the district and school. Information, technical assistance, and training will be provided by district personnel. In this way, the reform will be a "bottom-up" approach in which those who provide the instruction will also make the decisions that they will implement and evaluate.

We believe that this approach has a high probability of ultimate success because: it emphasizes the goal of bringing students up to grade level by the completion of sixth grade; it stresses accelerated learning and high expectations; it relies on a professional model of school governance that is attractive to educators; it can benefit from instructional strategies that have shown good results for the disadvantaged within existing models of compensatory education; and it draws upon all of the resources available to the community, including parents and senior citizens.

The Stanford Accelerated Schools Project is now working with two elementary schools in the San Francisco Bay Area as they establish their own accelerated school programs. In addition to these two pilot schools, the State of Missouri established a statewide system of accelerated pilot schools this autumn, and the State of Illinois is planning a statewide network for autumn 1989.

These pilot programs will provide a basis for building our knowledge about implementing changes. Ultimately, we expect

CHRISTINE HURRELL, Grade 6

to train groups on a regional basis, so that they can assist school districts to create their own accelerated schools. In addition, we expect to create an Accelerated Schools clearinghouse at Stanford that will do research, disseminate information, and provide training for a bold national movement to address the needs of disadvantaged children.

The focus is on the elementary school as a whole rather than on a particular grade, curriculum, teacher training method, or other more limited strategy. Underlying the organizational approach are three major assumptions: First, the strategy must elicit a unity of purpose from all participants. Second, it must "empower" the major participants and raise their feelings of efficacy and responsibility to the school and its students. Third, it must build on the considerable strengths of its participants rather than decrying their weaknesses.

Unity of purpose. Parents, teachers, and students must agree on a common set of goals for the school that will be the focal point of everyone's efforts. Clearly, these should focus on bringing children into the educational mainstream so that they can fully benefit from their future schooling and their adult opportunities.

Empowerment. Parents, teachers, and administrators must have the ability to make important decisions for the school and home to improve the education of students. This power will break the present stalemate among administrators, teachers, parents, and students, in which the participants tend to blame each other as well as other factors "beyond their control" for the poor education of disadvantaged students. Unless all the major actors can be empowered to seek a common set of goals and to influence the educational and social process that can achieve those goals, the desired improvements will not happen.

Building on strengths. Accelerated schools must use all the learning resources that students, parents, school staff, and communities can bring to education. In the quest to blame someone for ineffective schools, it is easy to exaggerate the weaknesses of the various participants and ignore their strengths. Parents have considerable strengths for influencing their children's education, not least of which is a deep love for their children and a desire for their children to succeed. Teachers are capable of insights, intuition, and teaching and organizational acumen that are lost in schools that exclude teachers from decision-making. Parents and teachers are largely neglected wellsprings of talent in the schools.

The strengths of disadvantaged students are often overlooked because they lack the learning behaviors of middle-class students. But disadvantaged students carry their own unusual assets that can be used to accelerate their learning. These often include an interest and curiosity in oral and artistic expression; the ability to learn through hands-on projects; the ability to learn to write before they can use the "decoding" skills that are prerequisite to reading; and, like everyone else, the ability to be engrossed in intrinsically interesting tasks. In addition, such students are enthusiastic and effective learning resources for other students through peer tutoring and cooperative learning approaches.

School-based administrators are also under-utilized when they are given "command" roles to meet the directives and standard-operating-procedures of districts, rather than allowed to work creatively with parents, staff, and students. Communities, too, have considerable resources, including youth organizations, senior citizens, businesses, and religious groups that should be viewed as major assets for the schools and the children of the community.

With these three building-blocks—unity of purpose, empowerment, and building-on-strengths—the Accelerated School uses an accelerated curriculum and accelerated instructional strategies to bring all children up to grade level and into the educational mainstream. We can help all students see themselves as productive learners with many future possibilities. Ultimately, we must treat at-risk students in the same way that we treat all "gifted and talented" students. In short, we must accelerate, not remediate.

Henry M. Levin is a Professor of Education and Economics at Stanford University. This summary is excerpted from his Conference Keynote Address.

"Dunces," "shirkers," and "forgotten children": historical descriptions and cures for low achievers

Larry Cuban
David Tyack

John Dewey wisely observed that "a problem well put is half solved." This has certainly been the case whenever American educators have approached low school achievement: historically, different descriptions of the problem have led to very different solutions. Consequently, practitioners, policymakers, and researchers must carefully examine how they define and describe these at-risk children, or they may perpetuate misconceptions and implement flawed solutions that will hurt these children rather than help them.

Labelling the low-achiever

Labels are telling. Contained in a name, either explicitly or implicitly, is both an explanation and a prescription. In his illuminating study of "educational misfits," Stanley J. Zehm compiled the nomenclature given to children who failed to do well in school. He breaks the categories down into four periods: 1800 to 1850; 1850 to 1900; 1900 to 1950; and 1950 to 1970.

In the first half of the nineteenth century, when the "common school" was usually a single, rural classroom, writers spoke of the poor performer as a "dunce," "shirker," "loafer," "reprobate," "wrong-doer," or "scapegrace," who was "idle," "vicious," "depraved," "wayward," "sluggish," "stupid," or "incorrigible." Although educators sometimes viewed the low-achievers as simply unintelligent ("dunce," "stupid"), far more common was the belief that these pupils lacked character. Underlying much of the rhetoric was a set of religious and moral convictions that placed responsibility for behavior and achievement in the sovereign individual.

How did educators of the latter half of the nineteenth century describe those students who did not keep up with the factory-like pace and competition of schooling? Zehm finds these adjectives: "born late," "sleepy-minded," "wandering," "overgrown," "stubborn," "immature," "slow," and "dull." The condemnatory, religious language used earlier was diminishing, but the notion that academic failure came from defects of character or disposition continued. If pupils did not learn, it was largely their own fault.

But some of these terms—"immature," "born late," "overgrown"—also showed that educators were developing a concept of the *normal* student, from which the "slow" student deviated. The normal student proceeded at the regular pace dictated by a graded school in a district bureaucracy. The student who was held back was deviant, "retarded," a failure.

In the early decades of the twentieth century, careful studies showed that a substantial minority of students—perhaps one-third—failed to pass their courses and proceed to the next grade level. The result was that the vast majority of pupils were lumped in the lower grades of the system. Such studies clearly demonstrated that while the bureaucratized school may have been efficient for large numbers of students, as it claimed, for immigrants, blacks, and other outsiders, it was wasteful.

In the 1950s and 1960s, protest movements sought to revamp public education, and educators campaigned to keep students from dropping out during that time of social turmoil. Groups that had been ignored or underserved demanded new influence over education. The blacks in the civil rights movements were first, but the message quickly spread to other groups—Hispanics, women, advocates for the handicapped, Native Americans, and others. These groups rejected earlier definitions of the problem of low achievers, especially those that blamed individuals (whether through their character or chromosomes).

How educators responded to the new reform agenda is indicated in the labels they gave to the students who didn't seem to fit into the educational system. By the 1950s, "dropping out" was a familiar topic, and commentators used a mixture of old terms as well as new euphemisms to describe the "socially maladjusted," "educationally difficult," and "less fortunate" drop-outs: they were "terminal students," "marginal children," "bluejays," "immature learners," "unwilling learners," and "dullards." These terms still located the cause of the trouble largely within the student, but at the same time new labels began to place the blame more on the school itself: these "educationally handicapped," "educationally deprived," "culturally different" students were "forgotten children," "the rejected," "pushouts."

Different diagnoses, different cures

For almost two centuries, explanations for "low achievement" have blamed individuals, families, teachers, educational institutions, or the inequalities embedded in the political economy. Each explanation proposed a solution in keeping with the perceived cause. Over time, the blame shifted somewhat, but earlier explanations persisted alongside the new:

1. Low achievers are responsible for their own performance. This response, which had deep roots in American ways of thinking, has been the dominant way to frame the problem. In the nineteenth century, notions of "intelligence" and cultural differences were rudimentary, so educators typically explained poor academic performance in terms of flawed character: the student was lazy or immoral. In the twentieth century, when "science" informs educational decision-making, psychological interpretations prevail: low I.Q. and inadequate motivation cause academic failure. The solution has often been to educate children by separating them into categories that presumably matched their genetic make-up—that is, remedial education.

2. Families from different cultural backgrounds fail to prepare and support their children's progress in the elementary and secondary grades. Moral complaints against the nineteenth-century low-achiever sometimes spilled over onto their families: parents were intemperate, undisciplined, unfamiliar with American (or urban) standards of behavior. With the rise of social science in the twentieth century, finger-pointing became less moralistic. But still, parents figured largely in theories that stressed the poverty, or the supposed cultural deficits, in the families of "unteachable" children.

3. The school system cannot accommodate the range of intellectual abilities and the different destinies of its heterogeneous student body. Many reformers argued that academic failure stemmed from the rigidity of the standardized curriculum and the inflexible practices of promotion and grading. They did not frontally attack the graded school per se, for it had served the majority of students well. Rather, they argued that a single, lockstep academic course of studies produced failures because not all students were capable of studying the same subjects at the same rate.

4. Schools reproduce the unequal social relationships of a capitalist political economy. In this view, schools are structured to produce winners and losers. Because public education reflects in its organization and processes the unequal social relationships of production, certain children will rise to the top and others fall to the bottom because schools are dynamic instruments of the larger political economy. Although educators may be unaware of the systemic character of such class, racial, and gender discrimination, and despite the resistance of students and teachers to domination, the overall results are predictable: some pupils are destined to fail because of the imperatives of the economy.

5. Children often fail academically because the schools' culture differs so greatly from cultural backgrounds of their communities. In this view, the schools, not the children, should adapt to social diversity. The teachers often unconsciously served as agents of a pervasive cultural system that was geared to standardizing their pupils. Classrooms became cultural battlegrounds, in which teachers communicated lower expectations and failed to connect with their culturally diverse students. Thus, they unwittingly created student failure.

Each of these diagnoses led to a different conclusion. Blaming the individual student or the family provided an alibi, not a solution. Blaming the rigidity of traditional education exposed institutional faults, but it led to policies that too often sequestered the misfits in an inferior and segregated corner of the system. Analyzing how the school reflected the inequalities of the larger political economy illuminated the difficulty of correcting social injustices in education and through education, but it offered no practical remedies; it made the school an ally of social injustice, not a cure for it. Spotlighting the gaps between the school's culture and the cultural backgrounds of students provided a useful corrective to the earlier ethnocentric explanations that blamed students and parents—but it failed to question the basic structure and processes of schooling. Moreover, because it focused on the unconscious cultural biases of teachers, it ran the danger of personalizing the answer: more sensitive instructors were obviously needed—but where were they to come from? Adding black history to the curriculum, or bilingual strategies to the instruction, would defuse conflict, but such attempts to make schools multicultural merely added to a familiar pattern of instruction; they did not recast the institution.

Almost all these diagnoses and the solutions they generated failed to alter the structure of the institution—in particular the graded school as the chief building block. Although the administrative progressives recognized the regimentation inherent in traditional instruction, they did not question the assumptions underlying the graded school, but rather made new niches for the unsuccessful. This kind of labelling and its specialized programs have become part of the problem; they often reflect and reinforce stereotypes about the genetic or cultural inferiority of certain groups. In the meantime, educators have failed to question the pedagogical assumptions and practices of the urban graded school—including its schedule, its segmentation of the curriculum, its grouping of students according to notions of "ability," its system of annual promotions, its elaborate bureaucratic structures of control, and its views of learning, teaching, and knowledge. To bring at-risk students into the educational mainstream, accelerated learning will need to transform these practices.

Larry Cuban and David Tyack are Professors in the School of Education at Stanford University. This summary is excerpted from their paper, "Historical Background of the Educationally At-Risk."

ERIKA MEDINA, Grade 6

The educationally at-risk: what the numbers mean

James Catterall
Eugene Cota-Robles

The notion of "educational disadvantage" arises from our repeated observations that children from families with particular educational, economic, or social characteristics have done poorly in school. This article focuses on three such groups: children from poor families, minority children (particularly blacks and Hispanics), and limited English proficient children. These groups historically do poorly in school and finish fewer years of education. The evidence shows that their future expectations do not look brighter.

A number of assumptions and observations underlie the connection between educational risks and poverty, race or ethnicity, and non-English speaking status. These explanations fall into three dominant themes: poor family resources, under-supported institutions serving these populations; and discrimination, both in the schools and in the larger society.

In recent years, policymakers have been increasingly concerned by the rapid growth of the numbers of disadvantaged children, and by the business sector's demand for a better-educated workforce. If education contributes to worker productivity, if business needs young workers to fill its jobs, and if large and identifiable groups of our kids are failing at school, a sensible policy goal would be to improve the educational prospects for these at-risk children.

One-third at risk

We estimate that nearly 20 million children, or about 30 percent of all under the age of 18, are disadvantaged. This estimate includes about 12.5 million children who live in poverty. Although there is some overlap in the categories we have devised, we suggest adding a fraction of the 5.4 million black and 3.8 million Hispanic children not in poverty, because certain disadvantages result strictly from race or ethnicity. In addition, an unknown share of the 4.6 million limited English proficient children not counted among those in poverty should be added; so too should some of the 7.5 million white children living above poverty levels in households headed by a single female. Finally, many children who live near, but not below, the poverty line should be considered educationally disadvantaged because of their historical performance in school.

Most classifications considered at risk are growing faster than the youth population generally:

- The share of children in poverty has increased by about one-third in the last 15 years, growing from under 15 percent to more than 20 percent.
- Projected population growth rates for both Hispanics (39.2 percent) and blacks (19.1 percent) between 1986 and 2000 far exceed that of whites (8.4 percent).
- The number of Hispanics in poverty for all ages increased by 73 percent between 1980 and 1986 alone.
- Nearly 54 percent of single female parent families live in poverty—an increase from 5.6 percent to 9.5 percent of all households with children in the past fifteen years.
- The number of homes where English is not spoken and the total number of limited English proficient children have been growing recently at about 4 percent a year—about twice the population growth rates for the nation.

In short, educationally disadvantaged populations are growing faster than the population at large, and they are projected to comprise larger shares of schoolchildren during the coming decades.

The educational consequences occur in two waves. First, disadvantaged children as a group perform poorly in school and leave earlier. Second, when they reach adulthood, their poor school record is associated with a variety of private and social costs.

Educational fallout

Poor educational performance is clearly associated with poverty and minority status. Research studies, state and national educational assessments, and common tabulations of Census Bureau reports all provide the evidence:

- School dropout rates for children from poor families are typically twice those reported as population averages; for the poorest children, dropout rates often exceed 50 percent.
- Among the adult population, about 24 percent of whites, 38 percent of blacks, and 52 percent of Hispanics never finish high school.
- Scores on the national Assessment of Educational Progress show marked deficits for disadvantaged groups: for example, math scores for 17-year-old Hispanics and blacks are 22 and 27 percent behind whites, respectively.
- SAT scores are typically 23 percent lower for blacks and 16 percent lower for Hispanics than they are for whites.

In sum, accumulated evidence points to consistent educational handicaps for children from poor homes and from the three dominant minority groups.

The later years

Educationally disadvantaged children tend to become disadvantaged adults. As adults, they have less economic opportunity, with lower personal incomes and less rewarding jobs. Society bears the related costs of their reduced productivity. Undereducation may also lead to other social burdens, among them lower levels of adult literacy, more welfare dependency, added health care costs, and more crime. The following statistics illuminate these statements:

Adult literacy:

- Only 25 percent of young adults (aged 21-25) who have not finished high school score well enough on a national test to indicate that they can follow directions from one place to another using a map.

JAMES PEEBLES, Grade 6

- Just over 20 percent in the same population show skills that would enable them to balance a checkbook.

Jobs and Productivity:

- The male high school dropout will earn $260,000 less over his lifetime than a graduate; a female dropout sacrifices about $200,000.
- The dropouts from a single graduating class in a large urban district were estimated to lose $200 billion in earnings over a lifetime; this would cost society more than $60 billion in lost tax revenues.
- Work interruptions due to loss of job are almost twice as likely for high school dropouts than for graduates, and four times more likely for dropouts than for college graduates. Such work interruptions are almost 50 percent more likely for Hispanics than for whites, and almost 100 percent more likely for blacks than for whites.

Welfare Dependency:

- For young adults, each added year of secondary schooling reduces the probability of public welfare dependency by 35 percent.
- Entrance rates into the food stamp program are more than three times higher for those with only some high school than for those who simply graduate. Attaining some college beyond high school cuts the average entrance rate by more than half. Entrance rates for non-whites are 3.5 times those for whites.

Child Health:

- Getting a high school diploma reduces the probability of having an out-of-wedlock birth by more than 50 percent.
- Low education among mothers (dropping out of high school) is a well-documented risk factor for various infant health problems. It is strongly associated with low-weight births, which carry high medical risks. Births to women who are high school dropouts account for about 21 percent of all births.
- Almost one-third of children living in poverty have no health insurance. The share of all children without health insurance has grown steadily and currently stands at about one child in five.

Crime:

- In a survey of incarcerated felons in Michigan, nearly half had left school before grade 9. Only 8 percent had finished high school.
- Across the nation, nearly 60 percent of all jail inmates completed less than 12 years of school.
- Blacks are overrepresented in the nation's prisons by a factor of more than 3 to 1. Hispanics are overrepresented by nearly 2 to 1.
- Attainment of the high school diploma has been shown to reduce the probability of arrest by more than 90 percent.

Who should pay?

The extent of apparent undereducation in the United States and the weight of the associated consequences raise compelling arguments for public intervention. Some research has suggested that the likely returns on public dollars invested in at-risk education are in the range of 5 to 1, and this reflects only the added tax revenues due to extra income. The money saved from welfare, health, and crime costs would greatly enlarge this figure. And the possibility of higher quality lives for millions of children would add substantial, though less tangible, value into the bargain.

The prospects for substantial public investment, however, are uncertain. On the one hand, public budget deficits and existing commitments appear to leave little room for funding the disadvantaged. On the other hand, the business sector, which is an important source of political influence, is showing increasing concern over the future job corps.

The concentration of educationally disadvantaged children in urban centers and in certain states leaves many jurisdictions disproportionately burdened. This situation raises questions about who would fund improved education for these children, and may allow various agencies to pass the buck. But if federal and state governments fail to act, the consequences are sure to extend across all our society.

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Is the time ripe for more government help?

Michael W. Kirst
Bernard Gifford

Everyone knows that children have little direct influence on politics. Lobbies for children tend to be small, fragmented, and poorly financed. Low-income children, especially, face poverty, discrimination, and other inequalities. Poverty has increased dramatically for these children, since senior citizens tend to vote at a much higher rate than young parents, thus bringing a major transfer of wealth to people over sixty-five in the last few decades.

Future government programs for the disadvantaged will probably never amount to more than "incrementalism." Americans believe that children are basically a private responsibility, and so government programs are seen as an attempt to "make up" for parental failure. Programs expand only in the face of overwhelming evidence of family disorganization and collapse. This rationale does not consider the plight of the children of the working poor, or near poor, whose school performance is at the bare minimum. This attitude—that the state should be responsible only for deficient and neglected children of failed parents—makes it difficult for the government to provide generous public benefits. American antipathy to funding people it considers undeserving—"welfare queens," deserting fathers, and "welfare bums"—has unavoidably hurt poor children. We invest in them reluctantly, wishing that parents would assume responsibility and resenting the children. In *Broken Promises: How Americans Fail Their Children,* authors Norton Grubb and Marvin Lazerson argue that:

> . . . public responsibility has also been corrupted by a lingering adherence to the ideology of parental determinism, the notion that parents alone determine the futures of their children. We continue to assert that parents raise their children privately and are wholly responsible for their successes and failures, despite the ubiquity of social institutions and public decisions in the lives of children.

Does America have any "public love" for children, or must government commitment be calculated only on the basis of economic costs—with a high return on public investment needed to justify government programs? Even if we value children not as the vulnerable human beings they are, but as tools for achieving other, economic goals, the politics of the 1990s might be favorable for new government initiatives.

One reason is that the declining birthrates in well-off families and the rapid growth of low-income children has fueled economic anxiety. The new emphasis on quality education for minorities and the poor is not so much a moral imperative as it is a pragmatic calculation of national self-interest. Corporate and political leaders are acutely aware that the high school-age population is smaller, and that a large and fast-growing proportion of it are students disadvantaged by economic and social conditions well beyond their control. Private-sector executives and government officials are concerned about the supply of skilled workers needed to maintain and increase the productivity and international competitiveness of the American economy. They are pressing schools to cultivate the potential of each student. They no longer contend that the majority of students from poor and minority backgrounds are destined to fail and that schools do not make a difference.

Another widespread, economic concern arises from our social security system: who will pay the benefits for the current baby boom generation, now in its forties? Costs of government welfare programs will increase in the 1990s if nothing is done to better educate the growing number of disadvantaged.

Consequently, despite the pessimism of some educators, children may fare better in the next decade than they have in the last one. Although federal programs have been cut and others face an uncertain future, state and local governments have financed a robust growth in education expenditures from 1983 to 1987. The needs of a burgeoning capitalist economy and the needs of disadvantaged children may coincide.

Children and politics

In the 1960s, government interventions were based largely on the moral imperative to win a war on poverty and overcome centuries of racial discrimination. These programs peaked as the nation's moral concern turned to the Vietnam War. A remnant of children's advocates continued to pursue legal and legislative tactics in the 1970s. Their actions brought some crucial but incremental gains, such as government aid for handicapped children. Legal gains increased in the 1980s, when the Civil Rights Act was revised after the Grove City decision. But the tax-cutting fever of the late 1970s and the major shift to defense expenditures under the Reagan Administration squelched these moves. The federal budget deficit suggests that future activity will more likely occur at the state level (although the state's responsibilities for disadvantaged children is also unclear). By the mid-1980s, public opinion polls showed dramatic increases in public concern about the condition of children, and a willingness to cut defense outlays to support programs for them. Political pollsters for 1988 Republican presidential candidate George Bush worried about a gender gap, and they found his support was very poor with married working women, according to a *Washington Post* article. Bush then proposed expanding the children's agenda beyond the Reagan Administration's base, including an earned income tax credit. Democratic candidate Michael Dukakis endorsed a $2.5 billion child care bill to support middle- and lower-class children. In short, children's issues have become good politics not only for business, but also for women at all income levels. A crucial political alliance, uniting the middle class with the disadvantaged, might be at hand.

What's the price tag?

Whatever coalitions emerge, federal budget deficits will present a major problem. Some programs, such as health insurance, might be transferred to employer financing. But many at-risk children need a number of public services, including health, education, nutrition, counseling, and child care. The overall con-

dition of these children must be improved and reinforced by committed parents. This implies large sums of money that do not seem to be forthcoming from the federal level or from the many states that face low commodity prices and slow growth. Consequently, the current fashion is to talk about "leverage" and "partnership" interventions. Education leverage programs with relatively low cost include better teacher recruitment, teacher in-service training, test development, and curriculum revision. Partnerships could pair public agencies not only with business, but also with private children's providers like Boys' Clubs, the YWCA, and churches. But expanding Headstart beyond the 17 percent of children it now covers to all eligible children could cost $4 billion. Expanding comprehensive child care approaches, such as Headstart, to the middle class could cost as much as $75 billion. Moreover, it is difficult to measure the result of increasing children's services because agencies, such as children's protective agencies, do not keep these records.

Federal fragmentation and confusion

Translating new political coalitions into effective government programs will not be easy. First, one must confront the fragmentation and inefficiency evident in current services for children. Indeed, the current system is so bad that it could discourage political trends for more funding. One study of children's services in California, by Stanford researchers Milbrey McLaughlin and Shirley Heath, concluded:

> The system, many professional and analysts agree, is beyond fixing with a bit of this improvement and some of that innovation. It is in need of fundamental rethinking.

In part, centralizing services for counseling, health, nutrition, youth-justice, employment, and education in one location might help. But we will probably need something more intense than a "shopping mall" of social agencies on school grounds. We need to coordinate the diagnosis and treatment of a child's social problems, on a case-by-case basis, and then follow the progress of that child for many years.

Removing the Education Department from Health, Education, and Welfare has exacerbated the fragmentation at the federal level. The federal government has no overall spokesperson for children, as it does for schooling or health. States and localities cannot coordinate the fragmented federal programs. What should we do about this? First, the White House should develop a children's policy and coordinate its work through the Domestic Policy Council in the Executive Office of the President. Second, federal incentive grants should be given to states and localities that integrate their children's services and use case-management techniques. Third, the Education Department should become a "broker" for children's services, including alliances with private groups.

We do not yet have national standards, or much data, on many childhood concerns. We need more information on children's mental health, the effects of child care, and child abuse. Curiously, we know a great deal more about the conditions of the administrative system that serves children than we know about the conditions of the children in those systems. For example, how does a "low quality" child care center affect a child?

Prescription for the future

The U.S. political ideology is not likely to undergo major change of heart, so educators must focus on practical, economic motives to justify government intervention. New coalitions of middle-class voters, business groups, non-profit agencies, and educators will need to be mobilized. These coalitions need to be linked to a broader concept of children's policy that helps overcome the current fragmented approach. Federal deficit problems mean that this coalition must work at state and local levels, as well as through national politics.

ENRIQUE MARTINEZ, Grade 6

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How families and communities can help

Joyce L. Epstein
Diane Scott-Jones

Families and community groups have a stake in education, and schools can help at-risk students much more when these shared responsibilities are acknowledged and understood. Working as a team, the "inter-institutional connections" between these groups can provide powerful new learning opportunities for students and help give them a new understanding about what education means in their lives. With these connections, students will know that their teachers, parents, and other adults in the community are working together to help them set and reach their goals for the future. Without them, many students will lose interest in school programs, fail courses, skip classes, and ultimately drop out.

More money for livelier programs

At-risk students are not well served in traditionally organized school programs. Although most school receive special funds for educationally disadvantaged students, the programs and services are often fragmented. They are also routine and ordinary, without the drawing power to motivate students. In the upper elementary and middle grades, extra resources (including Chapter 1 funds) are scarce, even for the students who are most at risk. Families and community groups need to pool social and financial resources so that they can augment and enliven school programs.

Letting parents know

We now know that the family maintains its educating influence on children throughout their school years, even as their peer group increases in importance. In the elementary and middle grades, schools must strengthen the family's understanding of its continuing role in nurturing, socializing, and educating their children. This task includes telling parents about school programs and goals, their children's developmental stages, and the help children need to succeed as students.

Parents, siblings, cousins, and other relatives form a core of family contacts and influences that schools have rarely used productively to help students reach important goals, such as passing each grade, feeling successful in school, and preparing for the future.

It's everybody's business

Each year, children become more serious members of peer groups, religious institutions, youth groups, clubs, and service organizations. They are influenced directly and indirectly by many community groups, including businesses, social service organizations, governmental agencies, colleges and universities, community foundations, and philanthropic groups. These groups could accelerate education if schools would help them understand the skills children need at each grade level.

The potential benefits of partnerships between schools and businesses are becoming apparent to everyone. Businesses recognize that they need successful schools to produce graduates who are ready to work, and many are coming to believe that it is better to support educational programs for students, rather than pay later to train workers. Similarly, partnerships between schools and health or social service agencies could help prevent problems that not only hamper education, but that are also costly to the community later on.

School is still the single, common organization for all students. Since it is the center of the students' educational and social networks, the school has a clear responsibility to plan, organize, schedule, coordinate, and evaluate the partnerships of schools, families, and community groups so that they can benefit students. This does not mean, however, that the school should do this without additional staff and funding from the state and the community agencies. Currently, schools face increasing problems and needs from highly heterogeneous groups of students, while commanding an ever-shrinking budget to meet their new demands. Inter-institutional connections among schools, families, and community groups may provide the best chances for helping schools fill the gap.

What does the research say?

Two decades of research shows that children have an advantage in school when their parents support and encourage school activities at all grade levels. Recent research has considered how schools can successfully involve parents in their children's education—especially those parents who are not likely to become involved on their own.

Research also shows that students achieve more when teachers involve parents in their children's homework. Not all families, however, know how to become involved in school-related activities and not all schools actively encourage and guide parent involvement.

Although research has recently given more attention to how teachers involve parents, few studies have examined the schools with large populations of educationally disadvantaged students. Indeed, a recurring theme in many studies is that less-educated parents do not want to become involved in their children's educations, or cannot or will not do so. But other research challenges this assumption by showing how some teachers have successfully involved the parents of the most disadvanged students. For example, a statewide study of elementary teachers, parents, and students found that teachers who frequently involved parents in their children's education did not make the stereotypic judgments about poor parents, less-educated parents, or single parents that were made by other teachers.

Similarly, teachers in urban, Chapter 1 schools say that most parents are not involved and do not want to be. But parents of students in the same schools tell a different story. They report that they want to help their children, but that the teachers need to give them more guidance. In a recent study, teachers in inner-city schools reported that they wanted all parents to help

with more than a dozen home activities during the child's elementary and middle grades, but only a few teachers had initiated strong school programs to show parents how to work with their children at each grade level. This variation in programs and practices is important: some teachers are very successful and others unsuccessful in strengthening productive partnerships with families. Also, teachers and parents have very different perceptions of each other that need to be studied and reconciled. Although poverty may make it difficult for parents to be very helpful, even though they really care about their children's education, our research suggests that when teachers and parents work together, they can learn how to be supportive.

Parents and schools lack preparation

To suggest that schools build a comprehensive network of parent and community connections presupposes that teachers have the knowledge and strategies they would need to create it. But information about family structures, family processes, parental roles in education, and productive connections between educators, families, and communities is not part of most pre-service education programs for teachers or administrators. Nor are these topics covered coherently in most in-service programs.

Indeed, of all the problems that prevent educators from moving from rhetoric about parent involvement to more successful practice, none is more serious than the lack of teacher and administrator education and training. Earlier surveys found that between 4-15 percent of teachers had a class course on parent involvement as part of their education. Thus, from 85-96 percent of all teachers were not prepared for planning productive school and family connections. The limited information that educators receive portrays parents in mainly negative terms—as "problems" that teachers and principals must deal with.

Teachers of at-risk students tend to have little understanding of the characteristics, strengths, and needs of their children's families. The discrepancies between the teacher's background and training and the students' backgrounds, families, and communities create difficult, but not insurmountable, barriers for parent involvement and school and community connections. States must mandate effective teacher and administrator education programs in school, family, and community connections for certification.

With thoughtful in-service education, every school could take some reasonable steps towards productive connections with schools, families, and community groups. Each district and each school should plan a comprehensive program over three years. This might include developing at least one partnership with a business, or creating a program in which students provide services to the school, neighborhood, and wider community. Each school district and state department of education should consider a wide range of schools as "demonstration sites." These sites will experiment and evaluate models that other schools can adopt or adapt.

The inter-institutional model calls less for new ideas than for new applications, new definitions, and new distributions of known practices. At present, the opportunities for students to benefit from education-related contacts with families, businesses, and community groups are haphazard, isolated, or selective. And they usually don't occur at all for the students who need them most.

This model requires an augmented school staff: school-family coordinators and as school-community coordinators in each district; part-time coordinators or teacher-leaders to become specialists in family and community connections in each school. In-service training will help teachers and administrators understand the concepts and aims of these programs.

No single group—schools, families, businesses, social service groups, or even the students themselves—can work alone to solve the current problems of at-risk students. The solutions will require the energies, resources, and support of all groups who have a stake in student success.

CHRISTINE HURRELL, Grade 6

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Accelerated education can begin before kindergarten

Edmund W. Gordon
Leslie P.A. Root

Preschool intervention was originally an upperclass phenomenon. Slaves, indentured servants, children's nurses, and nursery school teachers served as mother surrogates for the privileged classes. The changing roles of women and children in our society, and our growing concern about disadvantaged populations, have created the current emphasis on early childhood intervention for at-risk children.

The concern with child care among the poor and working classes is obviously not a new phenomenon in our society; however, the concern traditionally has been the sole responsibility of parents. Before institutional child care, informal child care was provided within the family. One family member tended a group of children or care was provided through parent cooperatives. These latter provisions tended to be made among low-income families when its women were a part of the labor force.

The early twentieth century brought with it the nursery school as an organized institutional service to the children of professional families. Daycare centers provided custodial care with little or no emphasis on education. It was nonetheless a boon to working mothers, as it provided a safe environment where a child's basic needs were met while the mother worked. These services were designed to meet the needs of parents, rather than children.

The interest in the child's development and education emerged later, as more affluent families' concerns for the intellectual advancement of their children became fashionable. The nursery school programs began as extensions of the childrearing in affluent homes.

Intervention by our national government brought institutionalized child care and education to the children not traditionally served by private and public elementary schools. Prior to the War on Poverty, the federal government intervened in the care and education of young children or provided emergency care on two occasions: first, during the Depression years and second, during World War II.

After Russia's 1957 launching of Sputnik triggered national concern with education, programs for young children became more deliberately educational in nature. Several investigators began to explore the use of the nursery school to improve low-income children's intellectual development and readiness for public school. In 1964, researcher Benjamin Bloom asserted that children achieve 50 percent of their intellectual growth by the time they are four years old, which suggested that the period form birth to four years is the best time for intervention. His views contributed greatly to the wide acceptance of the concern for providing enriched environmental conditions during the preschool years.

Project Head Start grew out of this trend and is the largest and longest federally-funded program of its kind. This development, radical when initiated, not only provided educational services for young children but also included health, nutritional, and social services as well. In addition, Head Start at one point included services directed at improving parental competence and community development. But perhaps its most notable achievement is that it changed the society's sense of responsibility for the education and development of young children. Young children were no longer the sole responsibility of parents, but of society as a whole, which acted through the government to provide assistance even in the absence of extreme need. For example, prior to 1964, less than half the states in the nation mandated kindergarten as a part of public education. By 1970, all of our states included some form of kindergarten and none were without some form of publicly and privately sponsored preschool programs.

Research shows that many of these interventions—including nursery schools, daycare centers, Head Start, infant care, home daycare and foster care—have helped the development of at-risk children. After considerable debate over inconclusive findings, the best contemporary judgment is that interventions like Head Start greatly improve the lifetime chances of disadvantaged children. The evidence shows that these interventions may reduce school drop-out rates, delinquency, school failure, and improve health, prosocial behavior, and self-management. Although the consensus tends to favor giving credit to the early interventions, it may be that the families who chose to take advantage of programs like Head Start are also the families which tend to produce better-adjusted children. We certainly know that one problem no program has solved is how to get to the "hard-to-reach" families.

Moreover, although preschool may boost development, contemporary and colloquially accepted models may not be able to adjust to changing conditions in the lives of many children and the new demands on them. Among these changing conditions are: persistent, intergenerational poverty that is creating a permanent underclass and an expanding homeless population; a substantial group of parents who are themselves children with inadequate resources; the prevalence of social diseases in epidemic proportions, such as AIDS, substance abuse, and social, if not psychological, pathology; steadily increasing survival rates for victims of accidents, diseases, and developmental disorders that result in larger number of seriously disabled people or people with handicapping conditions; and a radically changed world economy that has seriously eroded the national capacity and will to absorb, support, and protect the high-risk populations.

Among the new demands on children are:

- an almost universal need for higher-order literacy and thinking skills;
- multi-cultural literacy;
- the need for the early establishment self-confidence, motivation, perseverance, initiative, responsibility, and efficacy;
- the need for the early development of a sense of purpose, place, and relatedness (i.e., identity) in a diverse and pluralistic society; and
- increasing demand that one be able to integrate all of these into problem-solving strategies appropriate to the conceptual and technical, economic, moral, political, and social challenges of the age.

The democratic societies' commitment to individuality and personal independence implies a collective responsibility for developing these traits in all its members. We are just beginning to appreciate that their universal achievement will not be easy. In populations at risk, it will be even more difficult and will challenge the ingenuity of us all. Any intervention must be crafted and judged against these conditions and standards. What do these social conditions and standards demand from our preschool intervention? Principally, they require physical, social, and cognitive competence of parents; healthcare and nutritional support; child care from infancy to kindergarten; a means of access for the hard-to-reach and unsophisticated; and, in crisis situations, placement with surrogate parents and forced placement in institutions of developmental nurturance.

But while all children need a basic level of child care, not everyone can provide it. Those who may need it the most are often the least able to pay for it. They may be faced with disabling disorganization and dislocation (broken or homeless); or they may be less severely handicapped economically and socially, but lack the resources to cope with the additional burdens of mental, physical, or sensory handicapping conditions. People, particularly children, who fall in these groups are the weakest members of society. Our society's commitment to justice, as articulated by John Rawls, demands that this inequality be redressed. It is for these, weakest members, that the resources of the society may be unequally distributed if that redistribution reduces their disadvantagement.

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ENRA MEDINA, Grade 6

Going beyond "minimal competency"

Robert Calfee
Robin Avelar La Salle
Herlinda Cancino

Students from poor families have trouble with school. The questions that continue to frustrate educators and concerned citizens are *what can we do to improve their chances of success?* Success in school depends critically on homes that can prepare students to move quickly to the top of the ladder and then help keep them there. This system has been in place since the establishment of the nation.

Today, several forces drive us to look for alternatives: the needs of the workplace, the demographics of the next generation, and the continuing struggle for equity. Despite our efforts, the rich have gotten richer and the poor have gotten poorer. The Accelerated School concept, instead of giving students smaller pieces at a slower pace, challenges them in the elementary grades with larger and more meaningful projects, thus spurring rapid growth. But what, practically, does acceleration mean—especially in literacy? Common usage defines acceleration simply as going faster. Figure RATE applies this interpretation to three student groups. All progress at a constant rate, but these rates differ for students from high, middle and low groups. If nothing is done to *accelerate* progress in the low group, then the students in it will be significantly below par by the time they leave sixth grade. If the change in rate is made at the beginning of the elementary school experience (in kindergarten or before), then the amount and duration of acceleration is minimal. For the child entering sixth grade significantly below peers, however, the task is much more demanding.

Figure NAEP shows the pattern for reading scores from the 1984 National Assessment of Educational Progress, which is typical of many findings. The lines of progress are almost parallel throughout for all students, whose homes vary in the amount of education their parents received (a proxy for disadvantage). By the end of sixth grade, the most advantaged students have reached a level greater than the least advantaged students reach at the *end* of high school. For the at-risk third-graders to catch up with the top group, they have to increase their performance level between third and sixth grade by twice as much as their entire growth during high school—that's acceleration!

The key to genuine acceleration seems to us straightforward: the development of formal language competence so that skills and knowledge from one academic area can "transfer" to others. Critical literacy then leads to a "snowball effect," perhaps the most appropriate metaphor for acceleration. We turn next to the key factors that combine to promote true acceleration: transfer and critical literacy.

The snowball effect of transferring knowledge

Educators and psychologists have been concerned with the concept of transfer since the turn of the century, if not longer. Interestingly, most current theories of transfer have their roots in the debate between Edward Thorndike and Charles Judd in the 1900s. Thorndike sparked the debate by attacking the notion that studying Latin improves a student's general learning ability. He proposed an alternate view that suggests how much Latin helps other learning depends on the affinities between the initial task and the transfer task. Judd argued that transfer depends on how much the student is aware of the underlying shared principles between the two tasks. We believe that the dichotomy established by Thorndike and Judd is not actually an "either-or" situation, but rather a continuum.

We can place transfer theories between two extremes: low-road and high-road. Low-road theories predict transfer in situations where considerable perceptual similarity exists between the original learning context and the transfer situation. High-road transfer depends on deliberate, mindful abstraction and application of skills or knowledge from one context to another.

Figure RATE

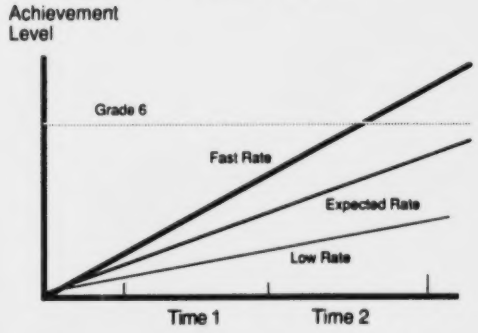
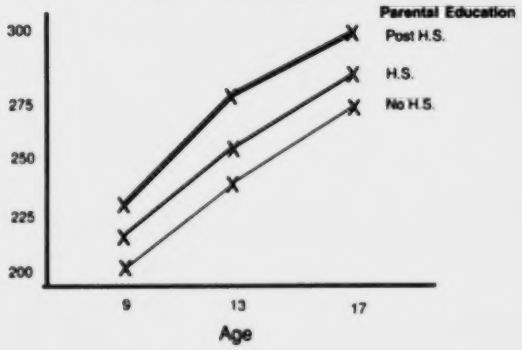


Figure NAEP
National Reading Proficiency



"Metacognitive awareness," a currently popular term that describes these theories, also refers to conscious, overt knowledge, as opposed to intuitive awareness.

The following example highlights the difference between high-road, or metacognitive, transfer and low-road transfer: Two third-grade students learn to comprehend a simple story, though their teachers use methods that yield quite different results. The first student learns by answering the teacher's questions about the *content* of the story. The questions may be literal or inferential, but the focus is on the content of the particular story. By focusing on the content of the story, the teacher prepares this student for low-road transfer. The student is able to understand one story and may be able to understand other stories as long as they *appear similar* to the original—similar characters, plot, setting—and as long as they happen to be structurally similar.

In the lesson for the second student, in addition to working with the content, the teacher also emphasizes the episodic structure, a feature of all narratives. This student learns that every story has episodes that consist of problems, responses, actions and outcomes—this is preparation for high-road transfer. The second student not only learns to comprehend obviously similar stories, but he or she can also apply the concept of episodic structure to all narratives. In addition, this student will discover that exposition, especially history and social studies, can also be analyzed and understood using episodic structure.

The focus of high-road transfer differs markedly from any of the low-road transfer theories. Unlike the low-road theories that either rely on direct situational equivalents (identical elements, stimulus generalization) or apparent similarities (networks, schemas), high-road transfer predicts transfer based on deep structural characteristics of the situations involved.

Survival skills for modern society

Let us review the goal of acceleration, as we define it. We do not believe that simply presenting students with the same material, only faster, will help at-risk students achieve the high level of literacy they need to meet today's literacy demands. Instead, we propose a quantitative *and* qualitative shift in the educational experiences of at-risk students from rote practice-based, low-road learning to a more metacognitive, high-road approach. The key to education is the development of "critical literacy"—the effective use of language for thinking and communicating. The future calls for people who can analyze and synthesize information on their own, initiate their own learning, and understand the complex relationships among subjects. Schools must pursue these goals, not minimal competency, for all children.

Today's schools should redefine literacy to include competence in using language for thinking and communicating. This kind of literacy is a high-level skill for surviving in modern society. All children can become successful readers and thinkers if instruction is clear and focuses on transferable knowledge and skills. By helping students acquire a metacognitive, strategic understanding of literacy, they will be more able to relate previous literacy experiences to new situations. In this manner, students will be able to *transfer* prior literacy skills and knowledge, rather than approaching each situation as if it were unique.

We argue against literacy programs that begin with a basic-skills, low-road mindset. Instead, we propose a high-road transfer leading to true acceleration. Teachers must use the natural knowledge and skills that all students bring to school and explicitly relate this information to the formal literacy demands of education. Also, schools need to examine their curriculum and testing so that they can move from basic literacy to critical literacy goals. The most significant goals of schooling transcend the current measures. If the concept of acceleration is to realize its full potential, we will also have to rethink our techniques of assessment.

We should strive to create a language-rich program for students and a language-rich partnership among teachers, administrators, and staff. Schools should stress the effective use of language for problem-solving and communication as a policy for the entire school. Through such an emphasis, we predict that *all* children will learn to think conceptually, analyze, and communicate—abilities critical to success in higher-level schooling and later life.

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JOHN LOPEZ, Grade 5

What's going on in the classroom?

Shirley Brice Heath
Leslie Mangiola

"Collaboration" has been at the center of much recent educational research—whether its focus has been peer tutoring and cross-age tutoring among students, or teachers and university researchers working together on "teacher research." Much of the latter research has acknowledged the teacher's need to figure out what is going on in his or her classroom. Is Peter distracted from his work when he sits near Allen? Should Jamie have some extra time to finish the elaborate artwork he has begun for this social studies project? These questions are typical of those that flit through teachers' heads each day.

But few attempts to figure out "what's going on in the classroom"—in terms of the classroom's social environment and students' ability to plan their time or to express what they have learned—have revealed the power of linking students, teachers, future teachers, students, and scholars in a research network. This article describes such a network, the benefits for each of its participants, and what we learned by working together.

The collaborative network was formed during the 1987-88 academic year, when a group of scholars and practitioners set out to learn more about the potential of cross-age tutoring. Participants included: Carol Urzua, director of bilingual education at University of the Pacific; her teachers-in-preparation for bilingual education; teacher Leslie Mangiola and her 5th and 6th grade classroom in a bilingual school in Redwood City; and Shirley Brice Heath, language researcher at Stanford University. Ronald Anderson, a graduate student at Stanford's School of Education, and Lucinda Alvarez, a Stanford graduate in bilingual education, helped make this collaboration possible by acting as occasional videorecorders and fieldworkers, taking notes on classroom activities and interviewing participants. Anderson videotaped Mangiola's class once a week as they read and wrote with first-graders in their school. Afterwards, the fifth- and sixth-grade students wrote reflections and fieldnotes on what had occurred during the tutoring session. Mangiola also wrote fieldnotes, recording her observations of the students' interactions.

Subsequently, the students and Mangiola came together in an informal classroom meeting to talk about their observations and to make plans for the next tutoring sessions. The fifth- and sixth-graders also read literature together, wrote, discussed their reading and writing, and edited their work for grammatical precision and expressive clarity. Videorecordings of these informal discussions (not the tutoring sessions), plus copies of their written work were sent to the future teachers in Urzua's college class. Each prospective teacher "adopted" a student from Mangiola's classroom for observation and analysis. Throughout the semester, these teachers used the tapes and writings to generate questions for Mangiola and Urzua about their specific practices, their principles of teaching, and their approaches to assessment. Near the end of the term, the future teachers visited Mangiola's classroom, met their "adopted" students, and then interviewed them. While Urzua's future teachers did their research, Mangiola and her fifth- and sixth-graders studied and observed their work as tutors and as learners. They wrote and read in preparation for working with first-grade learners. They eventually discussed multiple interpretations of stories, how their "pupils" sometimes lacked the background information to understand a story, different ways of writing a short story, and a factual account for a science lesson. As the following juxtapositions of quotations illustrates, their "common sense" knowledge about learning, reading, and writing paralleled many notions of educators and famous writers.

"To learn to read, first you have to feel good about yourself, to believe in yourself.

—Laura, fifth grade

"Founding itself upon love, humility and faith, dialogue becomes a horizontal relationship of which mutual trust between the participants is the logical consequence."

—Educator Pablo Freire

"He threw down his book...and clasped his hands at the back of his head, in that agreeable after-glow of excitement when thought lapses from examination of a specific object into a suffusive sense of its connections with all the rest of our existence..."

—George Eliot, *Middlemarch*

"Today I read a book about some one that spilled some paint. It was red paint. They really like it, because they like animals and that book was almost all about animals. Rosie's favret paint is green, and she said that her mother had bought has a green rabbit, but that it had to level because it *smaled* alot. Today Susan ask me if I had one and I said, Yes I did but I have to give it tomy cusant because I had to go to Mexico. Susan said that she did not have a rabbit but she had a cat and that her faveret color was red. I did not finished reading the book so I'm going to read it to them tomorowrs they really like the book"

—Erlinia, fifth grade

"Today I started reading to Miriam. The book that's called *la niña de los tres maridos.* Miriam said "what did you say?" I said *La niña de los tres marido.* So Miriam said that's not how you spell three. She thought you only put it like a number. So I started to show her how to write the number in letters."

—Isis, fifth grade

"Today Liberty read the book to me and she didn't want me to reader to her, she just read so much. I never saw her read like that in my life."

—Laura, fifth grade

"The history of educational theory is marked by opposition between the idea that education is development from within and that it is formation from without."

—Educator John Dewey

"When you're tutoring and trying to write a story together with your tutee, if you're listening, you get an idea. But you gotta wait, and by the time they're through getting their idea out, you may have lost your idea."

—Pablo, fifth grade

"Only dialogue, which requires critical thinking, is also capable of generating critical thinking. Without dialogue there is no communication, and without communication there can be no true education."

—Educator Pablo Freire

"Then I read to him half way through till I said "night after"—and I said do you know what that word means and he dint know so I pointed at the word that I had all ready read, and he said this means night after night. And I said good, you could read some words. He read around 10 words."

—Maria, fifth grade

"I read to patricia a book about animals. It had nice houses and ugly houses. patricia liked an ugly house and I like a nice house. Then Patricia said how come you like that hows and knot mine. Then I said People have diferent teast."

—Lalito, fifth grade

"But people themselves alter so much that there is something new to be observed in them forever."

—Jane Austen, *Pride and Prejudice*

"Learning is, most often, figuring out how to use what you already know in order to go beyong what you currently think."

—Jerome Bruner, *In Search of Mind*

What does it take for students, teachers, and researchers to accelerate children's thinking and language skills? First, we learned that teachers and researchers together have to take the initiative. Both have traditionally separated into opposite camps, each often suspicious of the other. But when they meet and trust each other, then teachers and researchers can begin to trust students to realize their potential as common-sense reasoners, natural pedagogues, and successful language learners. The students in Mangiola's class did not worry about editing their fieldnotes, but through the year their mechanical errors decreased, their syntax grew more complex, and confidence in their own knowledge increased greatly. Moreover, despite the contextual nature of standardized testing, they managed to improve their scores on these tests' segmented and isolated discrete skills. Those who had preferred to write in Spanish early in the year came to write more easily in English, without giving up their facility in Spanish. They learned a great deal about children's literature, editing, putting books together, and keeping the interests and background knowledge of their readers in mind as they wrote.

Beyond the individual efforts of teachers and researchers, however, the kind of collaboration we had was greatly assisted by the congenial administrative environment. In Fair Oaks Elementary School, administrators actively and enthusiastically cooperated with the collaborative work. For example, they allowed first-graders and the older students in Mangiola's class to move about the halls during "irregular" times and they helped get parental permission for the videotaping. But the particulars of their many efforts are far less important than the general sense of inquiry and investigation that pervaded administrators, teachers, and students. All parties wanted to know about the process and the outcomes, and they worked together, as if they were solving a mystery, to answer important questions, or to find new paths and directions. Researchers who have written about "effective" schools tell us repeatedly that, within a few minutes inside the door of a school, the atmosphere cues outsiders about the extent of the trust and respect to be found there. Administrators—both those within the school and those at district and state offices—govern this atmosphere. They can police teachers and students, or encourage responsibility, consistency, and reason in the everyday work of the school. "Teacher-proof" materials, prescribed times for specific tasks, and mandated, state-adopted textbooks obviously thwart the efforts of teachers and students working together to accelerate learning. What most hastens the learning of at-risk children is cooperation between administrators and teachers, and between teachers and researchers—all working with in the spirit of learning together.

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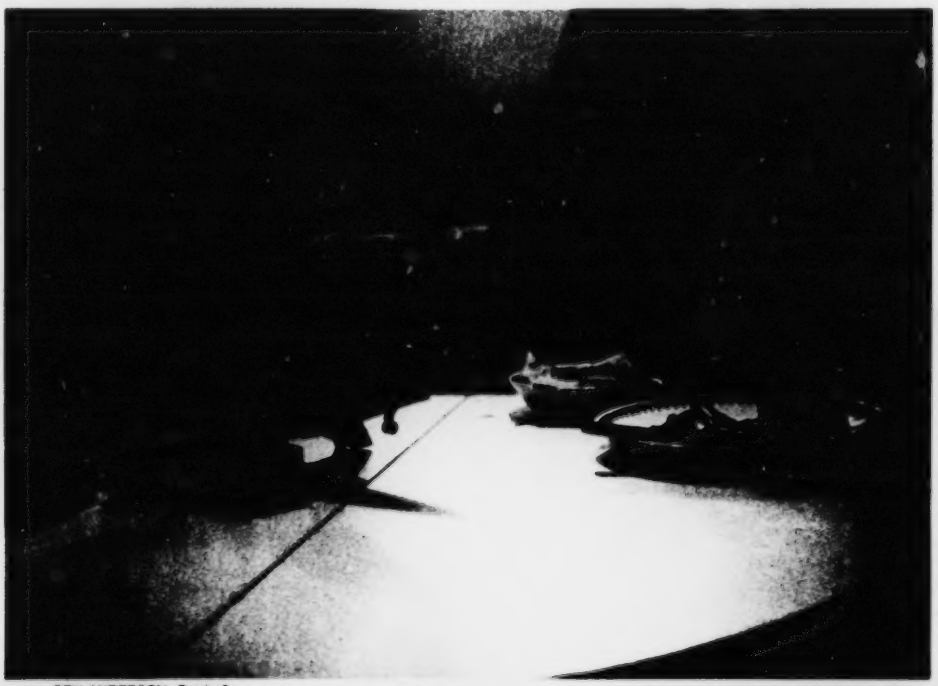

BEN ANDERSON, Grade 6

Mathematics for at-risk children: who cares?

Nel Noddings
James Greeno

A student faced with mathematics homework may ask: Why should I work on this? Who cares? What kind of people learn and do stuff like this?

These questions are not always explicit, of course, but they underlie every child's approach to mathematics. Our discussion will look at several facets of student learning. These include the student's relation with teachers, other students, the subject matter of mathematics, and, briefly, with the school and society in general.

Our society has compelling economic and social reasons to be concerned about children's achievement in schools, particularly in mathematics. As productive work and effective citizenship become more complex, many groups in society are concerned that there will not be enough workers to fill the jobs needed for the world's leading economy. Our vision of a democratic society, in which all persons can participate effectively and share the benefits of technological progress, is clouded by pessimism about whether we can successfully teach most students the basic disciplines of mathematics, science, and technology.

Most current discussions presuppose a particular goal for student achievement that leaves little room for legitimate diversity. The "problem," according to this dominant perspective, is that women and minorities lag behind privileged men in mathematics. Paradoxically, the desired measure of success in mathematics is the one in which privileged men have succeeded in the past, and privileged men have been the dominant figures in shaping our ideas of what it is. The paradigm is defined in terms of a "rationality" that is heavily loaded with qualities that our society associates with masculinity. "Equity" is then described as providing opportunities for everyone to strive towards this paradigm. Part of the "problem," according to this view, is that not enough young women and members of minorities aspire to be scientists, engineers, and mathematicians, and they often do not care enough about excelling in mathematics.

If women were taken as the paradigm, we might be concerned with other issues: Why are young men not interested in nursing, elementary education, home economics, and early childhood education? Why aren't young men more concerned about cooperating with their fellow students to reach a shared understanding of mathematics?

Our approach contrasts rather sharply, then, with some currently popular ones. We, too, want children to enjoy and succeed in mathematics, but we believe there is more than one way for this to happen. Children's self-worth should not depend upon their success in one particular way of knowing mathematics; for that matter, it should not depend upon mathematics at all. Many lovable, competent, and valuable people hate mathematics, at least in the form they have seen it and from which they have formed their perception of what it is.

The usual reasons given for the perceived deficiency of women and minorities are the low expectations that teachers have for these groups, poor home-school relations, a deadly and impractical curriculum, and a school context that does not support learning. All these reasons are important and interesting, but they overlook the primary questions: Why should I work on this? Who cares whether I do, and whether I succeed? What kind of people learn and do stuff like this?

Many children can answer the first of these questions in terms of the second: Mom and Dad care whether they learn mathematics, and that is enough to keep some children trying. Others know from their earliest days that the people they love "do stuff like this," and so they, too, have incentives to learn. A lucky few find something fascinating in the subject itself, but often this happy state is achieved only by those who have already found people who care and who "do stuff like this." Children are greatly influenced by the people around them—parents, teachers, and peers. Because the school has some influence over these relationships, we shall concentrate on their meaning for the mathematical growth of at-risk children.

Relations of students with teachers

For most children the most important answer to "Why should I work on this?" is that some loved and loving person cares that they do. This suggests that teachers must be loving models of mathematical thinking. It is especially important that teachers serve as such models for at-risk children, because their parents can rarely fill both functions; that is, parents of at-risk children, almost by definition, rarely have the mathematical competence to show their children what sort of people do this kind of work. The organizers of Accelerated Schools recognize the importance of involving people who care whether a student learns (usually the student's parents), and to encourage parents to express that caring, so that children are encouraged and supported by it. It may be important, as well, to consider how to help those children most at risk, whose parents are neither loving nor models of mathematical thinking.

Students' relations with other students

Currently, mathematical achievement is measured by how well children calculate and solve test problems. An alternative view is that mathematical knowing is fundamentally a social process, and that children's knowledge of it helps them understand how to participate in social activities of intellectual inquiry and sense-making. Learning mathematics should allow students to collaborate in processes of analytical and interpersonal reasoning; they should develop a shared understanding of mathematical principles, methods of solving problems, and notations. Part of the answer to "who cares?" can be "the students I work with."

In addition to increasing scores on regular standardized tests, mathematics instruction should also encourage trust between students and teachers, so that school becomes a congenial

ANA CARINA, Grade 6

Students' relation to the subject matter of mathematics

Most current mathematical instruction—particularly that provided for at-risk children—suggests that anyone who does not learn the subject lacks basic mathematical talent, and that only very special people can engage in mathematical thinking. These beliefs are false; they are also drastically counterproductive. Mathematical instruction should recognize the essential intellectual potential of all students, particularly at-risk children, to reason mathematically. Such reasoning need not be joyless—in fact, mathematical activity is often playful, and mathematical play is frequently productive.

Current educational practice also defines mathematical knowledge as the ability to solve tiny problems—computational finger exercises or problems that ask a single question about an arbitrary situation. If students are to develop significant capabilities for mathematical knowing, they must engage in serious work that requires the successful use of mathematical principles. Hence, larger, mathematical projects should be part of children's education

Relations of students with school and the society

The social organization of a school has a profound influence on students' participation in school activities. It also affects how credible they think the values and information the school provides are. Schools reflect and reinforce society's expectations about how much different students can learn—with effects that can be seriously limiting.

Recommendations

We suggest that some talented and loving teachers be highly trained in elementary school mathematics. These teachers should work in teams with others who are just as well trained in different subjects, and these teams should work with students over a period of at least three years. Continuity is important, because the idea is to develop trust, to show children that there is a loving person in their lives who "does this sort of thing," and to give the expert teacher time to build on her or his knowledge of how each child learns. It is important also for curriculum development and teacher education. Mathematics educators, curriculum developers, and teachers need time together to build a rich and diversified program. Teachers, especially, need to know where topics lead and how new skills are built on those already established.

This program emphasizes the dignity of work. It includes extended projects based on real work. These projects are ideal for teams because material from all disciplines can be included, and there is opportunity for special skill development as well. The activity of mathematical sense-making—conducted collaboratively by a group of students; led by a caring, confident teacher; and involving significant project activities—can teach children about the nature of mathematics, what it means to know and understand mathematics, and about themselves as mathematical knowers.

We also recommend that learning activities recognize that play is children's work, and thus include games. Here teacher training is especially important. Teachers need to know what can particular games can teach, when to suggest new ones, and how to help aides and other adults who may watch and guide children as they play cards, board games, logic games, and so on.

Constructive relations among peers must also be encouraged. We recommend an increased emphasis on small group arrangements, reciprocal teaching, peer and cross-age tutoring. Further, the use of projects and games should encourage children to plan together, modify rules, learn to evaluate their own and each others' work, and gain skill in interpersonal reasoning.

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Seeing, touching, and "figuring out what happens": the role of science in at-risk education

J. Myron Atkin
Senta A. Raizen

What does it take to draw at-risk students into their schoolwork? This question lies at the heart of education for disadvantaged children. Other students usually sense the advantages of completing elementary and secondary education successfully; therefore, they try to do what is required. Perhaps their parents graduated from high school, and the entire family accepts the fact that schools are important. Perhaps doing well in school is a goal the child values and, at some point, sees as linked clearly to attractive careers—like becoming a lawyer or an airline pilot.

For many at-risk students, however, education does not seem a priority. Adults and peers may not encourage them, and the role models and jobs they see in their neighborhoods have no apparent connection with success in school. Like everyone else, at-risk students have low tolerance for activities that are, to them, boring and pointless.

The school's curriculum must engage at-risk students and relate to things that matter to them. Science, because it often appeals to children, can offer a unique approach to educating those young people who ordinarily are not stimulated by and do not value what goes on in the classroom.

The intrinsic appeal of science is especially powerful for elementary school students. What engages very young children? Things they can see, touch, manipulate, modify; situations that allow them to figure out what happens—in short, events and puzzles that they can investigate, which is the very stuff of science.

At the elementary-school level, schools should place the greatest emphasis on investigation. They should make every effort to involve parents with their children, and children with other children. Such involvement makes education a family matter. It has the added bonus of reacquainting parents with the goals of education and helping them remedy some of their own educational deficiencies. When children work with each other, it helps them build a collective commitment to learning; it also motivates children to do things together that they might be reluctant to do alone. Innovative use of the computer not only encourages children to work together in the classroom, it also links community resources to schools, thus extending informal educational opportunities.

The most successful time for engaging students is in elementary school. Because science is such an excellent vehicle for this purpose, selected elementary schools should place science at the core of the curriculum. The elementary science programs supported by the National Science Foundation in the 1960s demonstrated that students, when motivated through science, improve their mathematical and language skills as well. How the applications of science affect people, and how societies manage the results of science knowledge and technology, also contributes to children's understanding of social studies concepts. A few such elementary science programs exist now; they should be expanded, studied, and possibly, emulated.

Teaching "by the book"

At present, however, only two subjects are treated seriously at the elementary school level: reading and rote arithmetic—both presented with relatively little attention to context. The typical instructional approaches require the child to be passive. He or she is expected to read the book, learn facts, and follow directions. Ironically, schools that serve large numbers of poor and minority children put even more emphasis on rote learning than do schools that serve advantaged children, with much time spent on drill and practice. As a consequence, real science is rarely taught at all. According to a recent study, an average of eighteen minutes per week is devoted to science in grades K-3, and only twenty-nine minutes per week in upper elementary school classes. When science is taught at all to young children, it is usually taught "by the book." In the vast majority of elementary schools, science instruction is largely a reading-and-recitation exercise, in which children are expected to answer questions posed by the teacher, preferably in the exact words of the textbook.

Science also receives cavalier treatment in the education of an elementary school teacher. Elementary school teacher certification typically requires only six or eight semester hours at the university level—and that work is often confined to a survey course, with little or no laboratory or field experience. No wonder only 27 percent of the elementary school teachers feel well qualified to teach science, as contrasted to 82 percent and 67 percent who feel well qualified to teach reading and mathematics, respectively.

What must we do?

We support the following changes for elementary science education:

- ***More time for science.*** Fifteen to thirty minutes per week is not enough time for the kind of hands-on experiences that are at the core of an effective science program. By integrating mathematics and language with science for at least part of the time, science can be given at least an hour a day on average.
- ***A clear curriculum.*** The curriculum must be well defined, effective, and workable. Activities must be clear in intent, purposeful, and accompanied by good teacher background materials. Links to mathematics and language arts must be explicitly developed. Art and social studies may also blend with science-centered activities.
- ***Teacher specialists.*** Particularly at the upper elementary level, teachers should specialize. It is unrealistic to expect all elementary school teachers to have deep grounding in every subject they are required to teach, but we can enhance the influence of those teachers who do have such grounding in science. They should be free enough to meet with large groups for science demonstrations, to work with small groups tutoring productive, student-led inquiries, and to supervise field trips.

- ***Strong leadership.*** A science-based elementary school must have strong leadership from the head teacher or principal who holds a vision of a productive science learning environment.
- ***Improved assessment.*** Test exercises and strategies should mirror the important goals of science education. Teachers must observe students and systematically record their ability in real experiments; they must set group tasks with enough time to allow children to show their skills.
- ***Family-oriented programs.*** Schools should organize programs so that parents can experiment and learn science with their children. Parents and children can figure out how to light a bulb using batteries and wires. They can learn which objects conduct electricity and which do not. They can sprout seeds and learn what makes them grow. They can incubate chick eggs to learn how embryos develop. The Family Math program at the Lawrence Hall of Science in Berkeley offers a suggestive model for this type of approach.

There is little precedent for establishing science-centered schools at the elementary level. The Fairmount School, a K-6 magnet school on marine science created with the aid of desegregation funds in San Francisco, offers one model. San Francisco's second science elementary-level magnet school, stressing "hands-on" science activities, offers another. For most experiments with science-centered elementary schools, a more general approach to science may be advisable, as exemplified by the J.P. Cornelius Elementary School in Houston, a magnet school that spends sixty minutes a day on science, with all science taught by science specialists assisted by aides.

Beyond the early years

A brief survey of science education at the secondary level is not reassuring. As at the elementary school level, high school science is seldom taught as investigation, and its connection to things that matter for adolescents (their own health, safety, development, and sexuality; jobs; future family responsibilities; consumer decisions; environmental protection) is tenuous. Much science teaching consists of memorizing the definitions of technical terms. Some experts estimate that students learn two to three times more new vocabulary in science than in their English classes.

As for teachers, they feel pressured to complete the book or course of study. The drive for coverage fosters superficiality and militates against taking the time for the students to make serious investigations. The essence of science is therefore lost, along with the elements of it that young people find most stimulating. Current testing exacerbates these conditions by stressing recall of facts drawn from many different topics.

The schoolroom must be connected with the rest of the world beyond the immediate neighborhood: the labor market, business, universities, government. For these young adults, peers exert a very great influence—an influence that can be harmful if the common culture dismisses school success as unimportant or even unacceptable. At-risk students must have opportunities to meet new adult role models, and they must begin to see that what they do in school relates to things that these esteemed adults do. This goal underscores the importance of forging links between high schools and the science world.

To consolidate the gains an improved elementary program would make, high school science education must collaborate with science-based industries, universities, museums, and government laboratories. Visits to corporate offices and laboratories would help students understand the range of scientific and technical jobs—from entry-level to professional—that exist in industry. Students would begin to see the connections between classroom emphasis on certain science concepts and the use of these concepts in industrial or other laboratories.

Well-designed programs can help convince at-risk students that they can participate in challenging science learning and careers. The excitement of being at the forefront of learning and gaining insight into jobs that offer rewards to themselves and to society are powerful antidotes to the disaffection and alienation from education that typifies the behavior of many at-risk students.

J. Myron Atkin is a Professor in the School of Education at Stanford University. Senta Raizen is Director of the National Center for Improving Science Education in Arlington, Virginia. This summary is excerpted from their paper, "Science as a Center for Accelerating the Education of At-Risk Students."

VICTOR ESTRADA, Grade 6

Instructional strategies: what works and what doesn't

Robert E. Slavin
Nancy A. Madden

Recent literature chronicles a panoply of programs that have—and have not—been successful for educating at-risk students.

Before considering what does work for disadvantaged students who are at risk of school failure, it is important to point out what doesn't work. One of the most frequently (and increasingly) used strategies is also the least effective: flunking. Many urban school districts are now retaining around 20 percent of students in each of the elementary grades, and in many such districts the majority of students have been retained at least once before they finish elementary school. The long-term effects on students who are retained are most often detrimental, controlling for their prior achievement levels.

Another widely used strategy that doesn't work very well is the traditional remedial "pullout" program, still by far the most widely used program under the federally funded program for compensating disadvantaged children, Chapter 1. Research on such programs finds that, at best, they may keep at-risk students from failing further behind their peers, but even this effect is limited to the early grades.

Pullout programs have been criticized for many years because they provide instruction that is poorly integrated with students' regular classroom instruction, they disrupt students' regular instruction, and they label students.

Growing awareness of the drawbacks of pullouts has led to increasing use of in-class models, in which Chapter 1 or special education researchers or aides work right in the classroom. Yet research on such in-class models has found them to be no more effective than pullouts.

If neither pullout nor in-class models are effective, what does make a difference for students at risk of school failure?

Prevention

Obviously, the best solution is prevention. Given the limited capacity of Chapter 1 and special education programs to bring at-risk students into the mainstream, attention has turned in recent years towards strategies that will give intensive (usually expensive) services in the child's early years, thus reducing or eliminating the need for remedial services later.

One of the most widely discussed preventive strategies in recent years has been the preschool education for four-year-olds, particularly for those from disadvantaged homes. Lyndon Johnson's War on Poverty of the 1960s led to the creation of the federal Head Start program and other preschool initiatives. Research tends to find that these preschools programs initially boost language and IQ scores of disadvantaged children, but these effects diminish each subsequent year until they are undetectable by the second or third grade. However, the students involved in many of the early studies of preschool are now in their early twenties, and long-term research on them has begun to show positive effects in such areas as higher graduation rates and lower delinquency.

Kindergarten. Kindergarten attendance is now so nearly universal that its effects are no longer of great interest. Concern has shifted to two issues: full-day vs. half-day programs, and particular kindergarten curricula and programs.

N.L. Karweit found that the results of full-day kindergarten (rather than half-day) are very similar to the effects of preschool. That is, full-day programs have a positive effect on first-grade readiness or performance, but by the second or third grade the effects have generally disappeared. As with preschool, extended-day kindergarten may get students off to a good start with language skills and school readiness, but it is not a sufficient intervention in itself.

First-grade prevention programs. Several effective instructional programs hold that success in first grade, particularly in reading, is the foundation for later success in school. These programs work intensively (usually including tutors or other additional staff) to insure that every child will successfully begin to read. Examples of these programs include Reading Recovery and the Wallach Tutoring program.

The rationale underlying first-grade prevention differs markedly from that underlying preschool prevention. During the 1960s, advocates of preschool as compensatory education tended to argue that the key to school success is IQ, and that properly designed early school experiences could have a lasting effect on IQ, which would in turn have a lasting effect on school achievement. Whatever one believes about the long-term effects of preschool, this argument was clearly found to be wrong; no long-lasting effects of preschool on IQ have ever been found.

In contrast, first-grade prevention programs are based on the argument that success in reading is the essential basis for success in school; therefore, the key moment for intensive intervention is first grade, not preschool or kindergarten.

All of the preventive first-grade programs use tutoring or small group instruction, and all have been extremely successful in increasing students' reading achievement. Unfortunately, only one, Reading Recovery, has data on the long-term effects of intensive reading instruction in the first grade. Students who received an average of six 30-minute lessons from a specially trained reading recovery tutor were compared to matched control children. By the end of the first grade, Reading Recovery students substantially exceeded the control group of students who were not in the program on an individually administered test of "text reading levels." Although the advantages declined over the three subsequent years, the difference was still respectable.

Classroom change programs

Clearly, one of the most effective ways to reduce the number of children who will ultimately need remedial services is to provide the best possible classroom instruction in the first place. Therefore, an essential element of an overall strategy to serve at-risk students is to use classroom instructional methods that have a proven ability to increase student achievement. We found nearly all the successful programs for classroom change were either continuous progress models or certain forms of cooperative learning.

Continuous progress programs. In continuous progress models, students proceed at their own pace through a sequence of well-defined instructional objectives. However, they are taught in small groups composed of students at similar skill levels (but often from different homerooms or even different grades). For example, a teacher might teacher might teach a unit on decimals to third-, fourth-, and fifth-graders who have all arrived at the same point in the skills sequence. Students are frequently assessed and regrouped based on these assessments.

Cooperative Learning. In cooperative learning, students work in small learning teams to master material presented by the teacher. When a team is rewarded or recognized based on the learning of each team member, cooperative learning consistently, effectively increases student achievement more than traditionally taught control groups do.

Like continuous progress programs, cooperative learning has been found to boost the achievement of average- and high-achievers as well as low achievers. In addition, cooperative learning has a consistent positive influence on self-esteem and race relations.

Supplementary/remedial programs. Unlike classroom change programs, these models supplement regular classroom instruction, and are usually remedial rather than preventive. That is, they are most often used with students who are already behind their peers in basic skills.

Programs that show results fall into two major categories: remedial tutoring programs and computer-assisted instruction (CAI).

Remedial tutoring programs. The most effective supplementary/remedial models use one-to-one tutoring. However, unlike the preventive tutorial models that use certified teachers or paraprofessionals, remedial tutoring programs tend to use older students and volunteers.

The best evaluated and most consistently effective CAI models have been forms of the Computer Curriculum Corporation (CCC) drill-and-practice programs. Students spend about ten minutes a day, in addition to regular class time, using CCC programs. Successful CAI programs tend to be very expensive and moderately effective, so there is some question about the cost-effectiveness of this approach. However, as software continues to improve and as hardware prices drop, computers may become an important part of a remedial strategy.

Success for All

Success for All combines the most effective programs of this review, and requires a comprehensive restructuring of the urban elementary school. In Success for All, the school takes responsibility to insure that no child falls behind in basic skills and that every child will reach the third grade on time with adequate skills. The program integrates several components from the research we have reviewed. It uses a structured one-to-one tutoring program for students (especially first-graders) who are falling behind in reading; preschool and extended-day kindergarten programs focusing on language sills and self-esteem; a continuous-progress reading program for grades 1-3 that uses many elements of cooperative learning; and a family support program to encourage parent involvement and home support of the school's goals.

After the first year, an evaluation found that students in an inner-city Baltimore Success for All school far outperformed matched students in language skills at the preschool and kindergarten levels and in reading skills in grades K-3. Overall, Success for All children averaged at about the 50th percentile, while children in the control group averaged at about the 28th. The largest effects were on the lowest achievers; the students who scored in the lowest 25 percent on the pretest outscored the average students in the control groups in grades 1 and 3.

The Success for All program will continue for five years to see if it is possible to bring every child to grade level by the third grade. However, the results so far show the potential power of a coordinated approach to schoolwide restructuring.

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Limited-English students can benefit from accelerated classes

Elizabeth Cohen
M. Beatriz Arias

Many educators assume that students with limited or no English proficiency must "learn English" before they can benefit from mainstream classes—particularly those demanding conceptual skills. On the contrary, such students can participate successfully in a mixed-language, heterogeneous group, develop higher-level thinking skills, and benefit from advanced course content *while* they are learning English.

The Program for Complex Instruction at Stanford has developed an instructional approach that is capable of handling linguistic diversity while teaching at a very high level. For example, second-graders learn to plot coordinates, use bar graphs, and understand some basic principles of physics and chemistry.

Currently, this approach is being used in over 200 California classrooms. In collaboration with the California State University system, it is being disseminated throughout the state.

Language isolation hampers learning

The language minority child is a large and growing segment in states such as California. In 1980, 23.5 percent of children aged 5-17 spoke a non-English language in California, with 17.5 percent in Texas and 13.4 percent in New York. A 1986 study by Beatriz Arias projected that, by the year 2000, 29 percent of California, 27.5 percent of Texas, and 11 percent of the New York state enrollment will be students whose home language is Spanish. As the concentrations of language minority students increase in the major urban school districts, so does their linguistic segregation. Consequently, language-minority students are frequently excluded from opportunities for interacting with their English-speaking peers. Students need to be exposed to meaningful English communication; they also need opportunities to speak English. In classrooms where most language-minority students share the same native language (in many cases Spanish), it becomes the lingua franca of the classroom.

Current practice in states such as California isolates language-minority children—even within formally desegregated schools. ESL classes and sheltered English classes have not only kept the language-minority child from English-speaking peers, but they frequently present a curriculum that is below grade level. Many are grouped in classrooms with bilingual teachers, but few native English speakers.

Language-minority children have been marginalized and segregated because educators have believed that students must achieve minimal language proficiency before they can be exposed to grade-level curriculum (let alone activities involving higher-order thinking skills). In a well-meaning attempt to teach them English, these children get a curriculum that has no science or conceptual work in mathematics. The preoccupation with teaching English often precludes educational acceleration for these at-risk students.

We do not advocate "submersion" in conventional English-only classrooms. Many studies have already shown that this traditional manner of handling children who do not have good English proficiency doesn't work. The difficulty we face arises from the narrowed terms of policy debate in education: The issue is posed as "bilingual education vs. ESL" or "bilingual education vs. English immersion." All these debates focus narrowly on how the child is to be taught English so that he or she can eventually participate in a mainstream classroom. They assume that the only option is to superimpose the language approach on conventional methods of teaching.

This exclusive focus on language obscures the fact that non-English speaking minorities are often among the most poverty-stricken in the community. This is especially true in the case of Puerto Ricans and the recent immigrants from Mexico. Better than half of all Hispanic immigrants are Mexicans who come from poverty-stricken areas. These arrivals from Mexico have little formal education. Even third-generation Chicanos, however, experience continuing poverty.

Language-minority children frequently are a low-status group within schools and classrooms. A recent California study of immigrant students in California reports that native English-speaking students hold many prejudices towards, and discriminate against, immigrant students. This problem is not confined to new immigrants, but includes barrio-ized and ghetto-ized populations who experience considerable social and economic discrimination.

These status differences in the society in general translate into different expectations for competence inside the school. Many language minority students from low-income homes arrive at school without the repertoire that makes for success in today's schools. Very rapidly, socioeconomic differences and lower levels of English proficiency *become translated* into academic retardation. Once this process occurs, the school responds by segregating students into more homogenous groups, according to perceived ability and language. Even if the language-minority student is placed in an integrated classroom, but in a low-ability group, he or she has low status and is expected to do poorly at a wide range of academic and intellectual tasks.

The educators we have worked with frequently say that language-minority children have difficulty thinking abstractly and need to learn the fundamentals before they are ready for more advanced, abstract concepts. Their beliefs are not based on research; they are not even based on experience, because the language-minority child is rarely given the chance to try more advanced and abstract curricular materials. These beliefs, however, are consistent with the educators' preconceptions about the intellectual competence of language-minority children from poor families.

Even the popular recommendation of cooperative learning for heterogeneous classrooms does not remove the problems connected with status differences between students. In classrooms where many language-minority students are encouraged to work together, research has found that those children who were more popular and who were seen as better in math and science talked more about their work and, as a result, learned

more. This unequal pattern of interaction is a status problem resulting from differences in expectations for competence held by peers.

Children help each other learn

Children can help teach each other English and other academic skills. This does not mean that English-speaking children who are on grade level will constantly be put in the role of tutor. Learning activities can be designed so that they use a wide range of skills and abilities, enabling each child to make an important contribution. With children talking and working together, using both languages and with materials in both languages, language learning can occur without isolating non-English speaking students.

Within a mixed-language small group, bilingual children can act as a bridge between non-English speaking group members and monolingual English members. Learning material can be rich, so that the context provides many cues to the meaning of words. Printed learning materials can be bilingual. This type of instruction allows the teacher of a heterogeneous class to teach at a high level. Children who arrive at school without a middle-class repertoire frequently fail to benefit from conventional curriculum and instruction. Instead of segregating these children in remedial classes or low- ability groups, this approach exposes them to advanced instruction that involves higher-order thinking skills.

Program for success

Much research has shown why this model, developed by the Program for Complex Instruction, works, and under what conditions it will continue to be successful. This research, and the extensive sociological and psychological theory on which it is based, permits us to offer an alternative model of instruction that accelerates education for at-risk children.

These are its major components:

Changed Classroom Organization. Students work in groups of five or six that have mixed levels of English proficiency, mixed academic skills, and both genders. Students take responsibility for their own and for each others' learning through the roles assigned to each group member. For example, one child is a facilitator who insures that everyone gets the help he or she needs. These are rotating roles. Students are responsible for completing individual tasks (such as a report on what they discovered and why they think the results occurred), but the group is not allowed to move on to another task until everyone has finished. Students are taught to ask each other questions, give explanations, show how, and help others without doing their tasks for them. Behavior is governed by a new set of norms: "You have a right to ask anyone else in your group for help" and "You have the duty to assist anyone who asks for help."

JOHN LOPEZ, Grade 5

Multiple Ability Curricula. Curriculum materials include tasks that are challenging and uncertain, but intrinsically interesting. Tasks should be open-ended, so that precocious students can carry them further, while less mature students can complete the tasks on a simpler level. Instructions should be in as many languages as the children require, and the inclusion of pictures is also helpful. Reading and writing, once integrated in a meaningful context, become means to the end of accomplishing a fascinating task. Evaluation of one such set of curricular materials, *Finding Out/Descubrimiento*, developed by E. De Avila, shows significant gains in standardized tests, particularly in Computation and Math Concepts and Application subscales for second-, third- and fourth-graders in multilingual classrooms.

Visual and spatial reasoning, interpersonal skills, and a variety of other real-world intellectual skills should be required for these tasks. Those who are weak in reading and writing may request assistance from those who are stronger in these areas. In return, those who are strong in conventional academic skills receive assistance from others in tasks requiring alternative kinds of abilities. It should be noted that this exchange process *does not take place* unless status problems are explicitly treated. Teachers must be trained in the use of several status treatments that are designed to prevent the domination by high-status students in the groups. Research this year by Elizabeth Cohen and Rachel Lotan has demonstrated that the more frequently teachers are observed using these treatments, the less high-status students are likely to be more active than low-status students.

In classrooms using this approach, the non-English speaking students find themselves in a group where there is a bilingual student to act as a linguistic bridge. English-speaking students discuss the concrete objects being seen, touched, and manipulated—an ideal situation for the language learning that occurs simultaneously with the development of higher-order thinking skills. Complex instruction can be combined with direct instruction for whole classes or for small groups. The major barriers to the widespread use of such an approach have become clear:

- Schools do not have the collegial support and specific feedback that would allow teachers to implement and maintain complex instruction.
- The current compartmentalization of the curriculum works against this approach, which integrates different subject matter and skills; practitioners feel compelled to teach for specific standardized achievement tests.
- Considerable teacher training is needed to produce consistent implementation across classrooms; teachers must understand the underlying theory and research.

The final barrier lies in the current linguistic segregation of the language-minority child. If there are few native English speakers in the classroom, this approach will not result in improved English proficiency. As long as the language-minority child remains in linguistically segregated situations, and as long as this student is seen as incapable of more challenging work, accelerated programs cannot be implemented.

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Evaluating the accelerated school: how do we measure change?

David M. Fetterman
Edward H. Haertel

The evaluation of an accelerated school must be multidimensional to capture its all-encompassing approach. Since the program's goals are ambitious and long-term, an accurate assessment of its achievements should be based on long-term research, with different kinds of information given prominence at various stages in the project's development. Ideally, the evaluation data should feed information back to the participants throughout the life of the project. This approach not only helps to keep the program and the evaluation alive and responsive to change, but it also makes assessment as useful as possible to its most critical constituencies. A summative evaluation, if needed, should be designed to meet the demands of the program's sponsors or its other audiences.

Early considerations

An ethnographic description of the program would establish a context for interpreting student and program development. It is also useful to document the kinds of complex changes that occur in the program over time (for example, changes in the way teachers interact), from the earliest start-up stages onward.

The description of context should include the following information: the location of the school; community characteristics, including socioeconomics and parent involvement; structure and organization of the school; curriculum and instructional strategies; degree of participation by teachers and students in school decision-making; school ethos or culture; student attitudes towards education and the school in particular; student academic self-concept and expectations for success; student achievement (grades, test scores); and attendance, study habits and values.

Ideally, some of the same data might be collected at a comparable, neighboring school. This would provide a valuable, additional baseline for assessment.

Achievement tests should be part of this evaluation, but they must be closely linked to the instructional program. Standardized tests should be used only as supplements to tests that are closely tied to the curriculum. Students should be tested at various stages to give participants ongoing information about the program's effectiveness. This information, combined with participants' notes and observations, would allow participants to find strengths and weaknesses throughout the program and make the necessary changes. Alone, achievement tests can only provide the baseball scores, they cannot tell how the scores were made. The notes and observations would provide some answers about what causes created particular results.

A comprehensive intervention like the Accelerated Schools Program has a multitude of goals and is designed to bring about academic and behavioral changes in learners. This breadth calls for a corresponding range of assessments. In addition to achievement tests that are closely tied to the curriculum, specific tests that might be of value include both achievement batteries like the Metropolitan Achievement Tests or the Comprehensive Tests of Basic Skills, and affective measures like the Self-Esteem Inventory or the Internal-External Scale.

The Accelerated Schools evaluation should also include an ongoing review of the project's strategies to encourage parental involvement. Quantitative data (i.e., how many parents participated?) and qualitative data (e.g., how did they respond? what did they do?) are needed to measure the degree of parental involvement over time and its impact at specific phases in the program.

Tailored for the setting

Each program must adapt its program, and consequently its evaluation, to the local setting. However, there are some commonplaces for any such program. These include time, standards, curriculum and instructional methods, and decision-making.

The life cycle of a program

Programs have their own life cycle. Those just starting should not be held to the same standards as those that are mature and fully operational. Similarly, students vary in ability, maturity, and length of time in the program. They should be able to work at their own pace within the boundaries of the Accelerated Schools Program ideals. Student assessment should be flexible enough to respond to the timelines of the program and the expectations of the people involved in it.

During the initial stages, evaluation should concentrate on implementation. Staff should agree on program goals, enlist the support of parents, and set priorities and expectations. Later, the evaluation must examine instruction and the students' experiences with it; still later, it must analyze student learning outcomes.

To examine outcomes, especially for a summative evaluation, specific dates or milestones should be established to measure success. The most obvious deadline is the end of elementary education, if one of the goals of this program is to close the gap between disenfranchised students and mainstream students before they enter secondary school. Yearly progress is another natural demarcation in the students' program.

Evaluation must also proceed on a more micro level. Teachers and counselors might meet weekly or biweekly to discuss each child's progress. This technique has been effective in programs for dropouts and other at-risk students. It would also provide an efficient context for collecting quantitative and qualitative data for the ongoing formative evaluation.

High, realistic expectations for success

One of the most fundamental changes the Accelerated Schools Program can make is the establishment of authentic, high expectations for student success. The expectations of teachers, counselors, parents, and even peers about a child's prospects for academic success may become internalized, and strongly influence the child's development. To accelerate learning, we

must set and maintain realistic, high expectations for all students, and indicate clearly the criteria for success. At the same time, a great emphasis on these standards can lead to pseudo-scientific quantification and the excesses of behavioral objectives—and thus cause us to lose sight of the bigger picture.

For purposes of evaluation, we must have some method to measure students in a consistent, ongoing manner, so that we can assess their change. (We do not have to fall back exclusively on commercial standardized achievement tests, either.)

What do the students think?

The students' response to curriculum and instruction is another vital, ongoing need for good evaluation. Ineffective or unresponsive curricula will undermine its goals by reducing students' motivation or providing a shaky foundation for their future development. Similarly, if a student and teacher are mismatched, the flow of information and ideas will grind to a halt. Classroom observation and student interviews are critical to check maladaptive behavior and to identify and reinforce adaptive strategies.

Much research suggests that the most effective instruction is fast-paced, teacher-centered, clear, organized, and direct—at least for basic skills and lower-order learning. For this kind of instruction, observations and student interviews should sample a representative range of students. Adaptive or individualized curricula may call for more complex assessment of methods and results.

Who makes the decisions?

Finally, a good evaluation will need to measure participation in decision-making. This is a process goal that will affect other programs and policies throughout the school. Participants' observations are extremely useful to document decision-making patterns, including changes in the power structure and organization of the school. Participatory decision-making differs from teacher autonomy, although the latter is also important. Rather, shared decision-making should lead to coordination and consensus; it should be reflected in school grading, attendance, and discipline policies that are accepted, publicized, and consistently enforced.

Decision-making should extend beyond school curricular and policy issues. Teachers should also be involved in decision-making about the evaluation itself.

The Accelerated Schools Program is a challenging educational effort—and a much-needed step to close the gap between disenfranchised and mainstream students. Its evaluation will have to be as novel and refreshing as the program itself if is to be responsive to this challenge.

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Putting educational decision-making back where it belongs: at the local school

Henry Levin

Whose job is it to get at-risk children back into the educational mainstream? The states'? The federal government's? The local school districts'?

So far, the responsibility has been diffused among so many layers of government that it is difficult to say who is accountable for the education of the growing number of disadvantaged children.

We propose a system for putting at-risk educational management back where it belongs: in the capable hands of principals, teachers, and staff at the school site, rather than at the more remote levels of the educational system.

The Stanford University Accelerated Schools Program is currently working with two pilot schools in the San Francisco Bay Area on the organizational changes and training we recommend in this article. We have found that when the school staff work together to address the educational needs of at-risk students, they can develop the leadership, initiative, and many of the necessary skills for managing at-risk education.

Reaching students by "remote control"

Under the current system, no one level of government has the task of educating the disadvantaged. Instead, the federal government and states have established a myriad of regulations that local educational leaders must follow. At the district level, educators select textbook and class materials and make detailed decisions on the design of programs, curriculum, and student assignment. Few important educational decisions are made by principals, classroom teachers, and other school staff—ironically, the very people who must face the day-to-day challenges of educating at-risk students.

This whole system fails, partly because it tries to meet the needs of such students by "remote control"—that is, by relying on the directives, regulations, and mandates of policymakers who are far removed from schools and classrooms. Teachers must comply with these decisions without having a say in the programs they must implement. They must follow the procedures that have been mechanically set out for them from above—whether or not they have found them to work in the classroom.

A successful strategy to accelerate the education of at-risk students will place much of the decision-making power and responsibility in the hands of teachers and other school-based staff, as well as parents and students. The question then becomes: How should this be done so that schools are effective and responsible?

In recent years, businesses have tried to use the talents and motivations of their employees by giving them a role in company decision-making. More and more studies show that when employees are involved, they have higher productivity and greater job satisfaction and less employee absenteeism and turnover. It is important to apply these lessons to the schools.

Every workplace must address and articulate three aspects of its activity: planning and design; implementation; and evaluation. Planning and design refers to the organization of work, how it will be performed, who will perform it, and what equipment and other resources will be used. Implementation refers to the execution of the work plans, and evaluation refers to the assessment of the process and its eventual results.

In today's schools, almost all the planning and design is set out by the district administration and state and federal guidelines. Within the guidelines set by higher levels of government and by local school boards, the district administration plans the curriculum, resource allocation, personnel selection, and school organization. This approach has been chancy for schools generally, but it has been particularly harmful for at-risk students.

First, uniform state and school-district policies ignore the enormous variety of student needs among schools. Decision-makers outside the school lack regular contact with students and teaching; thus, they tend to create abstract, "teacher-proof" curriculum and instructional strategies. At-risk education will be more effective when decision-makers *at the school* can respond to the unique student needs and characteristics they find in their classrooms.

Second, when teachers and other school staff aren't making the major educational decisions that affect the at-risk students they teach, they cannot take responsibility for what children learn. The work days of such teachers are often a repetitive round of hand-me-down activities prescribed by the policies, practices, procedures, curriculum, and materials chosen by the "higher ups." Such an arrangement inures teachers to the particular needs of their schools and students, for they can do little about altering conditions to satisfy those needs. Is it any wonder, then, that these teachers tend not to feel responsible for what at-risk children learn, and that they feel that these students' education stems from factors beyond their control?

Third, the current system of education ignores the abundant talent that exists within schools. Since there are few opportunities for teachers to influence educational strategies, they learn to ignore obvious problems and to repress their own ideas and suggestions. Many educators who have worked with teachers find they have an unusual wealth of productive ideas—but little opportunity to use them. This situation stifles initiative.

A school-based alternative

These flaws in the present system point to an alternative approach—one that shifts decision-making power and responsibility to each school. Although we refer particularly to the empowerment of teachers and other school staff, we also argue that parents and students should have a greater voice and responsibility in at-risk children's education.

But any plan to shift decisions to the school to accelerate the education of at-risk students must meet a number of criteria:

- Schools must be *accountable*. They must have a clear picture of goals for which they will be responsible. For example, these may include not only student achievement, but also

student attendance and participation in school activities and parental participation. To a large degree, these goals should be measurable, so that progress towards reaching them can be monitored.

- The schools must be given a wide scope of *discretion* to address these goals. If schools are to mobilize the talent and commitment of the school staff, they must be able to control instructional strategies, curriculum, and other major aspects of the school's organization.
- The school must have clear *incentives* to reach its goals. These incentives can be symbolic (public awards), financial (bonuses for personnel or additional funding for school programs), and intrinsic (enhanced professional support and camaraderie).
- School leaders must have the *information and technical assistance* to make and implement effective decisions. Schools can make good choices only when they know useful alternatives, their consequences, and the requirements for their implementation. Thus, the school district must be able to provide information, assistance, and staff development.

There are many ways to design and initiate these changes. Initially, the school must establish governance procedures that will involve all school staff, as well as parent and student representatives. A steering committee for each school year—composed of the principal, teachers, other school staff, and parent representatives—will meet regularly to establish priorities, review progress towards goals, identify areas that need attention, and provide a continuous forum for school issues.

The steering committee will also establish task forces to study specific school issues and make recommendations to the steering committee. These task forces will be composed of three to seven members, including teachers, other personnel, and parents.

The steering committee will approve any matter that does not have school-wide implications. School-wide decisions, such as the establishment of a new course or program, will have to be approved by the entire school staff. Once a month or on an as-needed basis, the entire staff of the school will convene to vote on the recommendations of the steering committee.

The principal in such a school will have unusual leadership responsibilities in addressing the needs of at-risk students. The principal will take the lead in identifying major problems that might need the attention of the steering committee; he or she will also coordinate the various groups. Moreover, the principal will work with the school district to get resources, information, technical assistance, and staff development assistance.

The school district will serve each school to a far greater extent than at present. Instead of formulating uniform district policies that would apply to all schools, district staff will consult with each school and respond to school needs in such areas as curriculum and staff development. Each school will be accountable for meeting the goals that are jointly set out between the central administration and the school. But periodically the schools will evaluate the services provided by the school district and inform the district administration and school board of their effectiveness.

In addition to the formal organizational changes that are required, this approach has substantial implications for both in-service and pre-service training. Existing and prospective principals, teachers, and other staff will need to learn how to work in groups, solve problems, construct better systems for classroom assessment, and use information effectively. Interpersonal dynamics and decision-making skills will also be important.

This type of school-based empowerment and responsibility will go far to increase the professionalization of teachers and other school staff; it will also make the teachers who instruct children responsible for their learning. Such an approach will more fully draw upon the talent of teachers and insure their commitment to the educational programs that they are charged with implementing on behalf of at-risk students. It will also create a medium for parents and students to influence school programs and educational results. Their support and interest will further encourage schools to provide their best.

Most important, it enables us to design, implement, and assess new programs—ones that will accelerate the education of at-risk students and assure their entry and success in the educational mainstream.

Henry M. Levin is a Professor of Education and Economics at Stanford University. This summary is excerpted from his paper, "Teacher/Student/Parent Empowerment and the Accelerated School."

OMAR CRUZ, Grade 6

Implementing the accelerated school

John S. Rogers
Robert Polkinghorn, Jr.
Brenda LeTendre

Two years ago, the Accelerated Schools Project faced a critical crossroad. What had essentially been a research project on at-risk children was soon to be practiced at two pilot schools in northern California.

After an extensive review of the literature and a survey of practices in at-risk schools, we had formed a vision of what schools serving at-risk students should "look like." We had developed a set of guiding principles for the school as a whole rather than detailed recipes for the school program. Our vision included a democratic governance structure, increased levels of parent participation, cooperative learning strategies, language-rich curricula, and after-school programs.

Given our broad vision of what schools should be, we began work with two pilot schools. Immediately, we confronted the crucial question: How could we help move schools towards this vision? We examined a number of previous reform efforts and came away troubled. Through our analysis, we saw disconcerting patterns—disconcerting because they ran counter to our vision of schools. For example, efforts to change schools have overwhelmingly fallen to outsiders—technological "experts" with "teacher-proof" packages, or legislators and bureaucrats with policy mandates forcing compliance and stressing schools' accountability. These "outsiders" typically defined the need for change and the means to accomplish the change. In this way, schools were implicitly defined as places in need of repair. Teachers were viewed as technically deficient, mere conduits for transmitting an expert's knowledge.

We believe that this dominant model of school change has certain faulty characteristics: 1) It ignores the expertise possessed by those "on the line"—the teachers and principals who interact with children daily. 2) It draws a sharp line between those who produce knowledge (experts) and those who transmit it. 3) Finally, it disregards the concerns of those who know the school situation the best—again, the teachers, principals, and parents. Furthermore, underlying this view of schools is the assumption that there exists an ideal technology for schools, which only experts can identify and develop.

Through our collaborative work in the two pilot schools, we have rejected this core assumption. We argue that this dominant model of change fails to take seriously the role of the teacher as a professional and potential agent for change. In this dominant model, the school's structure is assumed, and the task of change is to bring new and better skills or materials into the classroom. Our rejection of this traditional change model led to the creation of a unique implementation program. We called it the "Inquiry Process for Change." In this model, teachers examine not only what is going on in their own classrooms, but also the organization of the school—for example, how the school's time and resources are being used, and how this structure impacts their own needs and goals.

The inquiry process

Our model hearkens back to the work of John Dewey and Robert Schaefer. In it, researchers collaborate with schools to develop norms of critical inquiry within the school. As teachers inquire into curriculum, instructional strategies, and the social milieu of the school community, they regain their role as experts. We have found that this expertise, along with structures that help transfer decision-making to the teachers, leads to exciting changes within the school.

We chose an inquiry model over the dominant model of change for three reasons. First, the inquiry process analyzes the organization as well as the individual. While the dominant model of change focuses on the behavior of each teacher within the classroom, the inquiry process critically examines the school as a whole as well as the behavior of teachers. This organizational inquiry provides insights into powerful, school-wide "regularities" that are not typically gained through individual perspectives or approaches to change. When this analysis leads teachers to consider change, they do so with the whole school program in mind.

Second, the inquiry process is compatible with our understanding of teaching and learning. Our vision of a conceptually rich curriculum reflects the belief that students are not merely empty vessels who need to be filled with disconnected facts. Rather, they must be taken seriously as active partners in the learning process. This vision of the learning process mirrors our view of a teacher's development within the inquiry process. In the words of educator Robert Schaefer, the dominant model of change conceives of the schools "simply as distribution centers for dispensing cultural orientations, information, knowledge developed by other social units"; the inquiry process enables the school to become "a producer as well as a transmitter of knowledge."

A final argument favoring the inquiry process parallels the more general argument for democratic governance. The inquiry process places the power to elicit change in the hands of those most familiar with salient issues and challenges. Contrary to the logic of the dominant model, adults working with poor children need the capacity to address the challenges they face—not more help from outside experts. "What seems most enervating about teaching in the lower schools," said Schaefer in his 1967 lecture, "The School as a Center for Inquiry," "is not the severity of the difficulties encountered but the relative powerlessness of the individual to further his effectiveness." By transferring decision-making to the teachers, the inquiry process puts energy and imagination back into the school.

We now turn to a more detailed description of this process. Our comments are intended to suggest a collaborative model that universities or districts might follow when working with schools that serve at-risk students.

Stage 1: Creating a vision. We began our collaborative effort by appealing to the special expertise of the teachers within our pilot schools. Each staff forged an explicit vision for the school community, a vision that emphasized the central goal of the Accelerated School: to move every at-risk student into the educa-

tional mainstream by the end of the sixth grade. To build this vision, teachers examined their individual beliefs as well as their underlying assumptions. Not only did the staff come to recognize their common beliefs, they also saw the collective nature of the project.

Stage 2: Identifying a "problematic." In an effort to allow teachers to delve deeply into one set of concerns, we created cadres of five to seven teachers (representing all grade levels) plus a facilitator from Stanford. Each cadre focused on one dimension of the school's vision. Cadre members began their work by defining "problematics," sets of questions that identified or explained potential obstacles associated with fulfilling the vision. For example, one group was concerned with improving the school's math instruction. They began with the question: Why, on average, did their students' standardized achievement test scores in math concepts and applications gradually decline from grade two through grade six, while the scores in math computation remained at or near the national mean?

Stage 3: Looking inwards. Once a "problematic" was defined, each cadre, assisted by the Stanford collaborator, began to study existing programs and practices within the school. This inward look allowed teachers to reflect on their own work and the work of others at the school. Teachers observed each others' classes, surveyed parents' community attitudes and perceptions, and conducted interviews of staff members and local social service organizations.

Stage 4: Looking outwards. After taking a look at programs and practices within the school, cadre members looked outside their school to see ways other schools had successfully addressed the same issues. Cadre members read and discussed pertinent articles from journals and heard firsthand reports about successful programs outside their school. This exposure to exciting programs allowed cadre members to broaden their perception and their imagination of what was possible at their school. Cadre members gained a new level of awareness and understanding from the process.

Stage 5: Synthesizing ideas into action plans. Cadres synthesized what they knew about the problematic. The cadre designed a pilot program, adapted to the needs of the students, teachers, and parents at the school. The program was grounded in the rich knowledge base developed during the previous stages of the cadre's work.

Stage 6: Initiating pilot programs and evaluation. The final stage centered on trying the programs that were designed in Stage 5 and evaluating how they might be improved and expanded. Cadre members tested the new programs for four to six weeks, then examined them to see how well their new approaches addressed the needs of the students, the target goals of the cadre, and, ultimately, the school's vision. This final stage allowed the teachers to take time to reflect and analyze the impact and the value of their work.

Outcomes

We have completed our first full year in each of the two pilot schools. Already a norm of inquiry has been established in both. Teachers, along with principals and parents, are asking more questions and challenging many of the underlying and often debilitating assumptions that plague schools serving at-risk children. For example, teachers are not accepting low test scores as "that's the way it is." They want to know more about the validity of standardized tests for students at their school, and they want to explore alternative ways to measure student learning. In short, teachers are meeting together, reframing the challenges, seeking answers, and then experimenting with new curricular and instructional approaches to address those challenges. Rather than following a mandated "teacher-proof,"

SANH PHENGSAN, Grade 6

and perhaps also a "kid-proof," program, the staff at both schools are seeking ways to accelerate the learning of their students by melding their own expertise with that of "outside" experts.

Teachers, principals, and parents are accelerating their own learning. Teachers and principals are learning to tap their own well of expertise and problem-solving abilities. Parents are finding that they, too, are experts who bring to bear a unique perspective on their children and their school. All members of the school community—teachers, students, parents, and administrators—are coming to understand and support a shared vision.

Remaining challenges

Our work with two pilot schools has raised a number of important, unresolved issues:

Time. Where do busy people (teachers, principals, parents) get the time to meet, discuss, troubleshoot, experiment, evaluate, and reflect?

Federal, state, and district mandates. How can we achieve unity of purpose within an ever-changing and often contradictory environment of policy decisions and regulations?

Institutionalization. How can we make changes last? How do we ensure that the spirit of inquiry remains alive within the schools?

If we can successfully meet these challenges and keep our eyes on the principles of the Accelerated School, we can indeed accelerate the education of at-risk children and further the learning of their teachers, parents, and principals.

Robert Polkinghorn, Jr., Brenda LeFendre, and John S. Rogers are Coordinators of the Accelerated Schools Project of the School of Education at Stanford University. This summary is excerpted from their paper, "The Accelerated School: Implementation Issues."

ILLINOIS NETWORK OF ACCELERATED SCHOOLS

Lovejoy Elementary School and
Mark Twain Elementary School
Alton C U School District 11
1043 Tremont
Alton, Illinois 62002
618/463-2133

Hermes Elementary School
Aurora East Unit School District 131
417 Fifth Street
Aurora, Illinois 60505
312/844-5550

McCleery Elementary School
Aurora West Unit School District 129
1002 Illinois Avenue
Aurora, Illinois 60506
312/844-4495

Sheridan Elementary School
Bloomington School District 87
1403 West Walnut Street
Bloomington, Illinois 61701
309/828-2359

Kerr Intermediate School
Blue Island School District 130
12320 South Greenwood Avenue
Blue Island, Illinois 60406
312/385-6630

Emerson Elementary School
Cairo Unit School District 1
3101 Elm Street
Cairo, Illinois 62914
618/734-1027

Perry Elementary School
Dundee C U School District 300
251 Amarillo
Carpentersville, Illinois 60110
312/426-1440

Garden Hills Elementary School
Champaign C U School District 4
2001 Garden Hills Drive
Champaign, Illinois 61821
217/351-3872

Gavin Elementary School
Chicago Heights School District 170
280 East 12th Street
Chicago Heights, Illinois 60411
312/756-4153

John P. Altgeld Elementary School
City of Chicago School District 299
1340 West 71st Street
Chicago, Illinois 60636
312/962-2850

Beidler Elementary School
City of Chicago School District 299
3151 West Walnut Street
Chicago, Illinois 60624
312/265-7411

Jefferson Elementary School
City of Chicago School District 299
1522 West Fillmore
Chicago, Illinois 60607
312/997-3280

Paul Revere Elementary School
City of Chicago School District 299
1010 East 72nd Street
Chicago, Illinois 60619
312/947-4118

Daniel Elementary School
Danville C C School District 118
516 North Jackson Street
Danville, Illinois 61832
217/431-5400

Steele Elementary School
Galesburg C U School District 205
14800 West Main Street
Galesburg, Illinois 61401
309/343-0516

Smith Elementary School
Pembroke C C School District 259
PO Box AA
Hopkins Park, Illinois 60944
815/944-5448

Jefferson Elementary School
Jacksonville School District 117
733 North Clay Avenue
Jacksonville, Illinois 62650
217/245-7905

Washington Elementary School
Mattoon C U School District 2
1200 Shelby
Mattoon, Illinois 61938
217/234-4464

Ericsson Elementary School
Moline Unit School District 40
1619 Eleventh Avenue
Moline, Illinois 61265
309/757-3500

Harding Elementary School
Monmouth Unit School District 38
415 East 9th Avenue
Monmouth, Illinois 61462
309/734-4915

Horace Mann Elementary School
Mt. Vernon School District 80
1722 Oakland
Mt. Vernon, Illinois 62864
618/242-0714

Willow Elementary School
Pekin Public School District 108
1110 Veerman
Pekin, Illinois 61554
309/346-4334

Washington Elementary School
Quincy School District 172
8th and Sycamore Streets
Quincy, Illinois 62301
217/222-4059

Barbour Elementary School
Rockford Public Schools, District 205
1116 Montague Street
Rockford, Illinois 61102
815/966-3395

Illinois Network of Accelerated Schools

A partnership of
25 elementary schools,
the **State Board of Education**,
and **Educational Service Centers**
to better **serve at-risk students**.

Based on the **assumptions** of
unity of purpose,
building on strengths,
empowerment

and the **principles** of
school-based governance,
goals (school vision),
pupil and school assessment,
curriculum,
instructional strategies,
community resources,
parent participation/training,
and ***extended daily session***

which were developed by Dr. Henry Levin
of Stanford University in California.

Further information is available from:

Illinois State Board of Education
Department of School Improvement Services
Program Development & Delivery Section
100 North First Street (E-233)
Springfield, Illinois 62777-0001
217/ 782-5728

ACCELERATED SCHOOLS PRINCIPLES AND ASSUMPTIONS

The *principles* set for the Accelerated School are relatively broad and can be designed and implemented in a wide variety of ways.

School-Based Governance. The actual choice of curriculum, instructional strategies, and other school policies will be decided by the instructional staff of the school.

Goals. The governing body of the school will establish a clear set of goals for students, parents, and staff with respect to the purpose of the school and its activities.

Pupil and School Assessment. An assessment system will serve accountability purposes as well as diagnostic ones for improving instruction.

Nutrition and Health. Children without adequate diet and with dental and health problems are not likely to have the concentration and feeling of well-being that are prerequisite to learning. Especially important are undiagnosed and untreated hearing and vision problems since virtually all learning activities are centered around these two senses.

Curriculum. A language-based approach, in all of its forms--reading, writing, speaking and listening--for all subjects must be stressed across the curriculum. An important aspect of curriculum will be the development of applications that relate directly to the daily lives and experiences of the children and demonstrate the usefulness of the tools and concepts that are presented. Most importantly, the students will be active subjects in the learning, rather than passive objects.

Instructional Strategies. The school should stress greater availability of instructional time, with an instructional pace that is adequate to keep students attentive and learning. Some suggested teaching approaches are peer tutoring, cooperative learning, and the use of outside assignments or homework that must be done outside of the classroom.

Community Resources. Accelerated schools must enlist all of the resources at their disposal to accomplish their mission. Among these are adult tutors, senior citizens, local businesses, social service agencies, and counseling and youth agencies.

Parental Participation and Training. All parents or guardians will be asked to affirm an agreement that clarifies the goals of the Accelerated School and the obligations of parents, students, and school staff. Parents will also be asked to encourage their children to read on a daily basis and to ensure that independent assignments are addressed, and will also be expected to respond to queries from the school. Parents will be given opportunities to interact with the school program and to receive training for actively assisting their children. Such training will include not only the skills for working with a child, but also many of the academic skills necessary to understand what the child is doing. In this respect, it may be necessary to work closely with agencies offering adult basic education to provide the parental foundation.

Extended Daily Session. An extended session until 5 p.m. will provide additional learning time for students.

Dr. Henry Levin states that ". . . effective programs must be based upon raising expectations and conferring higher status on the disadvantaged for the learning progress that they will make rather than on lowered expectations and stigma." His Accelerated School concept is based on three *assumptions*: **unity of purpose**, **empowerment**, and **building on strengths.**

The first assumption, **unity of purpose**, calls for the development of a common set of local goals for the school that will involve the energies of all participants. As parents, teachers and students focus on these goals, a community effort will result and further benefit all parties.

The assumption of **empowerment** builds on unity of purpose and allows the participants to make important decisions in the school and in the home to improve educational opportunities for the students. Having established common goals, participants are now free to work toward those goals as a group with the real power to make changes. Without this power for change, it is unlikely that improvements will take place or be sustained.

The final assumption incorporates the resources of all participants and **concentrates** not on the weaknesses of the schools, families, or system, but instead **on the strengths** of all individuals and groups.

Levin concludes that ". . . within the context of a unity of purpose, empowerment and building on strengths, the Accelerated School utilizes an accelerated curriculum and accelerated instructional strategies to bring all children up to grade level and into the educational mainstream."

Location of Illinois Network of Accelerated Schools by Educational Service Center

Center Location	Accelerated School
Educational Service Center #1 Courthouse Room 715 Rockford, IL 61101 815/987-3023	Barbour Elementary, Rockford
Educational Service Center #2 19525 West Washington Grayslake, IL 60030 312/223-3400	
Educational Service Center #3 2701 Central Road Glenview, IL 60025 312/998-5065	
Educational Service Center #4 421 County Farm Road Wheaton, IL 60187 312/682-6955	Harmon Elementary, Aurora McCleary Elementary, Aurora Perry Elementary, Carpentersville
Educational Service Center #5 1000 Wolf Road Northlake, IL 60164 312/453-0856	
Educational Service Center #6 Chicago Board of Education 1819 West Pershing 4C(SE) Chicago, IL 60609 312/890-2460	Altgeld Elementary, Chicago Beidler Elementary, Chicago Jefferson Elementary, Chicago Paul Revere Elementary, Chicago
Educational Service Center #7 800 Governors Highway, Box 69 Flossmoor, IL 60422 312/798-6600	Kerr Intermediate, Rhe Island Gavin Elementary, Chicago Heights
Educational Service Center #8 2021 Avenue J Sterling, IL 61081 815/625-1495	Ericson Elementary, Moline
Educational Service Center #9 Downtown Courthouse-Room 107 Ottawa, IL 61350 815/434-0124	
Educational Service Center #10 105 Sage Street Channahon, IL 60410 815/467-4048	
Educational Service Center #11 210 S. Lafayette/Box 556 Macomb, IL 61455 309/833-5133	Harding Elementary, Monmouth Jefferson Elementary, Jacksonville Washington Elementary, Quincy
Educational Service Center #12 400 N. Highland Cove Center, IL 61611 309/698-7119	Steele Elementary, Galesburg Willow Elementary, Pekin
Educational Service Center #13 200 South Frederick Rantoul, IL 61866 800/523-0652 217/893-4921	Daniel Elementary, Danville Garden Hills Elementary, Champaign Smith Elementary, Hopkins Park
Educational Service Center #14 1300 N. 11th Springfield, IL 62702 217/525-2061	Sheridan Elementary, Bloomington
Educational Service Center #15 Box 249 Charleston, IL 61920 800/643-3370 217/348-0951	Washington Elementary, Mattoon
Educational Service Center #16 Educational Cooperative Building 500 Wilshire Drive Belleville, IL 62223 618/398-5280	Lovejoy Elementary and Mark Twain Elementary, Alton
Educational Service Center #17 Third Floor, Courthouse Olney, IL 62450 618/395-8626	Horace Mann Elementary, Mt. Vernon
Educational Service Center #18 1008D North Carbon Marion, IL 62959 618/993-2696	Emerson Elementary, Cairo

ILLINOIS STATE BOARD OF EDUCATION
100 North First Street, Springfield, Illinois 62777-0001

Thomas Lay Burroughs, *Chairman, Illinois State Board of Education*
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